U. S. Bureau of Biological Survey

WILDLIFE REVIEW

AN ABSTRACTING SERVICE FOR WILDLIFE MANAGEMENT
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Except as indicated, abstracts are by Neil Hotchkiss, editor.

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WILDLIFE (GENERAL)--BEHAVIOR

SCOTT, J. P. and others. Methodology and techniques for the study of animal societies. Annals of the New York Academy of Sciences 51(6): 1001-1122, illus. November 1950. $2.50.

".....serves as a general introduction and handbook for the study of 'sociobiology' and animal behavior under field conditions." This group of papers by 11 authors discusses the aims, theories, attitudes, methods, and equipment involved in studying animal behavior and sociology. Emphasis is on injecting scientific rigor, experimentation, and controls into field studies. Most of the papers are enlivened by examples from the authors' work. Vertebrate animals receive most attention. All of the papers are of value to wildlife biologists; but of special interest are articles on comparative behavior of dogs and wolves, comparative behavior of 3 species of grouse, and effect of competition on an experimental rat population. There are several lengthy bibliographies.--W. H. Stickel.

WILDLIFE (GENERAL)--BIBLIOGRAPHY

SMITH, MALCOLM, editor. The Zoological Record, volume the eighty-fourth; being the records of zoological literature relating chiefly to the year 1947. 1356 pages. May 1950. $16.00.

The references in this volume are organized under 19 headings (mostly phyla or classes), each paged separately and available for prices ranging from 2 to 20 shillings. The material is thoroughly indexed.

SPEIRS, J. MURRAY; JOHNSTON, J. M.; and KINGSMILL, RUTH. Bibliography of Canadian biological publications for 1948. 126 pages. Ontario Fisheries Research Laboratory, Dept. of Zoology, University of Toronto, 39 Queen's Park Crescent, Toronto, Canada. December 1950.

1651 items classified under 43 headings; 48 additional references for 1946 and 1947; and an author index.

WILDLIFE (GENERAL)--COMMUNITIES & HABITATS

BEIDLEMAN, RICHARD GOOCH. The vertebrate ecology of a Colorado plains cottonwood river bottom. M.A. thesis, University of Colorado. 1948.

BRUMWELL, MALCOLM J. An ecological survey of the Fort Leavenworth Military Reservation [Kansas]. The American Midland Naturalist 45(1): 187-231, illus. January 1951.

Includes descriptions of the land and the plant associations; and annotated lists of amphibians, reptiles, mammals, and birds.

BUECHNER, HELMUT K. Bioecology and biocenology in wildlife education. Northwest Science 24(4): 158-163. November 1950.

MAIN LIBRARY K.M.

WILDLIFE (GENERAL)--COMMUNITIES & HABITATS--Continued

GWATHMEY, JOHN H. The Mattaponi. Virginia Wildlife 12(2): 18-20, illus. February 1951.
Human history and wildlife on a tidewater Virginia river.

WHARTON, JAMES. The Rappahannock. Virginia Wildlife 12(5): 19-20, 24, illus. May 1951.
Human history and wildlife on a tidewater Virginia river.

WILDLIFE (GENERAL)--CONTROL & MORTALITY

BENTON, ALLEN H. Effects on wildlife of DDT used for control of Dutch elm disease. The Journal of Wildlife Management 15(1): 20-27. January 1951.
26 songbirds, a bat, and a gray squirrel were found dead after a 2% DDT spray was applied to elms in Princeton, New Jersey in the spring of 1949. Mortality was greater among young than among adults. If spraying had been completed by April 15 there would have been little bird mortality.

BITTNER, CARL S. Protecting Pennsylvania orchards against mice, deer, and rabbits. The Pennsylvania State College, Agricultural Extension Service, Circular 342. 8 pages, illus. September 1949.
There are discussions of deer, woodchucks, rabbits, pine mice, and meadow mice; and details on the poisoning of field mice.

HOWARD, WALTER E. Poison-dye combinations can save brush burn seedlings from wild life. California Cattleman, February 1951, pages 14-16.

SPRINGER, PAUL F. and WEBSTER, JOHN R. Effects of DDT on saltmarsh wildlife: 1949. U. S. D. I., Fish and Wildlife Service, Special Scientific Report: Wildlife No. 10. 24 pages, illus. 1951?
In mid-August and again in mid-September, different concentrations of DDT were applied by airplane to 4 study areas on the Brigantine National Wildlife Refuge, Atlantic Co., New Jersey. The higher dosages (1.6 and 0.8 pounds of DDT per acre) killed many fishes, insects, spiders, and crabs. They did not seem to harm birds, mollusks, and mites.

WILDLIFE (GENERAL)--EDUCATION
(See also WILDLIFE (GENERAL)--COMMUNITIES & HABITATS, Buechner)

THE AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS. Conservation education in American schools. The American Association of School Administrators, twenty-ninth yearbook. 527 pages, illus. Washington 6, D. C. 1951. $4.00 (copied from Journal of Forestry for June 1951, page 456).

A review by John F. Lewis includes a summary of the proposed policies of the Commission on Conservation Education in American Schools, as follows: "(1) programs should deal with all natural resources and their relationships, (2) programs should be based upon broad scientific and social concepts, (3) programs should start at the community level....., (4) such study should be correlated with the prevailing curriculum, and should be presented at all instructional levels in both rural and urban schools....., (5) .....classroom instructions should be accompanied by outdoor educational experiences, (6) schools should cooperate with governmental and non-governmental agencies concerned with resource use, (7) schools should set up in-service courses in conservation education, and (8) teacher training institutions should make conservation education their special concern....."

SEAGEARS, CLAYTON B. Conservation education in New York. The Conservation Volunteer 14(81): 32-37. March-April 1951.

WILSON, LEWIS A. and others. Arbor and Wild Life Day; Keys to conservation teaching; Teach nature lessons out of doors; Cameras are better than guns; and other articles. The University of the State of New York, Bulletin to the Schools 37(6): 155-197, illus. February 1951.

WILDLIFE (GENERAL)--FOOD

CHRISTENSEN, CLYDE M. and others. Enemies of aspen. Lake States Forest Experiment Station, Lake States Aspen Report No. 22. 16 pages. January 1951.

Diseases, insects, mammals and birds, climate, and fires are aspen's principal enemies. Beaver and, on Isle Royale, moose cause considerable mortality. Deer, rabbits, livestock, grouse, and other species do some damage.

LATHAM, ROGER M. The food of predaceous animals in northeastern United States. Report 1. Pennsylvania Game Commission, Harrisburg, Pa. 69 pages, illus. 1950.

Illustrated tables by states (Maine to Ohio and Virginia) of the food of individual species of hawks, owls, foxes and other carnivores, house cat, and snapping turtle; with a list of prey species and a bibliography, by states.

WILDLIFE (GENERAL)--GENERAL TECHNIQUES

DOBIE, JOHN and JOHNSON, RAYMOND E. Pond mapping by aerial photographs. The Journal of Wildlife Management 15(2): 221. April 1951.

WILDLIFE (GENERAL)--GENERAL TECHNIQUES--Continued

KABAT, CYRIL; THOMPSON, DONALD R.; and KOZLIK, FRANK. A device for dating natural events in game animals. Wisconsin Conservation Department, Technical Wildlife Bulletin Number 1. 4 pages, illus. 1950.
"This report describes a calculating device embodying the slide-rule principle and based on the Gregorian calendar."

WILDLIFE (GENERAL)--MANAGEMENT

ANONYMOUS. Report of the [Nebraska] Game, Forestation and Parks Commission, 1950. 26 pages. Lincoln, Nebr. 1951?
The report of the Game Division, beginning on page 8, includes a general account of conditions; details regarding intensive studies of pheasants, quail, grouse, waterfowl, deer, and muskrats; and summaries of food analyses, habitat restoration, land inspection, and other projects.

BLAIR, FRANK D. The future of 'free' hunting. The Conservation Volunteer 14(81): 1-8. March-April 1951.
The author believes that, in spite of many complications, free hunting can continue if we preserve soil and water and improve relationships between farmers and sportsmen.

BLUNT, FLOYD M. Wyoming's federal aid program in 1950. Wyoming Wild Life 15(3): 8-13, 32-37, illus. March 1951.
Includes land acquisition, development, maintenance, and research (antelope census, population studies of deer and elk, experimental feeding of calf elk, elk tagging, use of camouflage wire to protect alfalfa stacks from deer and elk, elk migration surveys, check station operation, feathered game survey, fur bearer survey, and disease research).

CASADY, LEROY and others. State of Nevada, Report of the Fish and Game Commission, for the period July 1, 1948, to June 30, 1950, inclusive. 26 pages, illus. Carson City, Nev. 1950.
Information on fisheries, upland game birds, waterfowl, beaver, law enforcement, big game, education, predator control, and other conservation projects.

CHAPMAN, FLOYD B. What about winter feeding? The Ohio Conservation Bulletin 15(2): 4-5, 30, illus. February 1951.

CONNECTICUT BOARD OF FISHERIES AND GAME. Report of the Board of Fisheries and Game, 1949-1950. Pages 339-352 in Digest of Connecticut Administrative Reports to the Governor '49-'50. Vol. 4. Hartford, Conn. 1950.
Includes an outline of organization, finances, law enforcement, fisheries management, game restoration, game population trends (small mammals, birds, deer), aircraft spraying of insecticides, Pittman-Robertson program, rabies in foxes, marine investigations, and fish restoration.

WILDLIFE (GENERAL)--MANAGEMENT--Continued

DAMBACH, CHARLES A. The importance, needs, and management of American game resources. The Ohio Conservation Bulletin 15(6): 30-32. June 1951.
"Although game has considerable economic value in the aggregate to the sporting and tourist industry, it should be recognized that it has little or no economic value to the average farmer on whose land most of it is produced." "It should be recognized that production can be increased significantly only by the provisions of the necessary game welfare factors on the land--and that their establishment is dependent upon the willingness of the farmer to cooperate and the willingness of the sportsmen to provide the necessary incentive. The incentive may be provided by the sportsmen through direct economic return to the farmer or through the state by such services as protection from hunter abuse, protection from crop damage by wildlife, and guidance and material help in establishing permanent food and cover."

DARLING, F. FRASER. The ecological approach to the social sciences. American Scientist 39(2): 244-254, illus. April 1951.
The magnitude of man's influence on wildlife makes it imperative that we understand our own behavior.

DAY, ALBERT M. Fish and Wildlife Service. Pages 267-302 in Annual Report of the Secretary of the Interior for the fiscal year ended June 30, 1950. Superintendent of Documents, Government Printing Office, Washington 25, D. C. 1951.
Includes accounts of marine and inland fishery investigations, utilizing the fishery resource, administration of Alaska fisheries, federal aid to the States in wildlife restoration, the refuge program, river basin developments, research in wildlife management, predator and rodent control, international cooperation in conservation, and fish and wildlife protection.

DURYEA, PERRY B. State of New York, Conservation Department. Thirty-ninth annual report, for the year 1949. 321 pages, illus. 1950.
The report of the Division of Fish and Game on pages 101-195 summarizes law enforcement, fish culture, fish and wildlife investigations, inland fisheries, marine fisheries, game management, game farms, and engineering.

EDWARDS, MALCOLM G. Standing Indian. Wildlife in North Carolina 15(5): 8-9, 20, illus. May 1951.
This article tells how 14,000 acres of the Standing Indian Wildlife Management Area in Macon County is being managed for both big and small game.

FISHER, JAMES N. We can produce both timber and game. Wisconsin Conservation Bulletin 16(1): 3-9, illus. January 1951.
The author believes that good forest management and good game management are nearly synonymous. He gives examples for non-forest lands and for hardwood, pine and aspen lands and cedar swamps.

WILDLIFE (GENERAL)--MANAGEMENT--Continued

GABRIELSON, IRA N. Wildlife management. 274 pages, illus. The Macmillan Co., New York. 1951. $4.50 (copied from Journal of Soil and Water Conservation for April 1951, page 101, where the book is reviewed by Douglas Wade).

GORDON, SETH, Consultant. California's fish and game program. Revised May 5, 1950. 245 pages. Published by the Senate of the State of California. (copied from The Journal of Wildlife Management for January 1951, page 119).
A review by I. T. Bode indicates that this report to the Wildlife Conservation Board is interestingly organized, inspires confidence through the consideration of the public's ideas and needs, and stimulates thought. "The report is particularly strong in its constant awareness of the impact of man and his operations upon the wildlife management field."

HANSCUM, CHARLES W. Game Division news. Wyoming Wild Life 15(1): 8-15, 37-38, illus. January 1951.
A report on the State's big game management activities, damage to property by game animals and game birds, and predator control.

HARRISON, HAL H. Year 'round pleasures for sportsmen. Pennsylvania Game News, Special Issue No. 2. 128 pages, illus. March 1951.
Includes chapters on "Food and Cover for Wildlife", "Farmer-Sportsmen Relations", "Predator Control", "Winter Feeding of Wildlife", "Public Education", "Junior Conservation", "Propagating Game", "Farm Ponds and Trout-Rearing Ponds."

HJERSMAN, HENRY A. The 1948 surveys of California's hunting take and their significance. California Fish and Game 37(1): 77-95, illus. January 1951.

HOVIND, RALPH B. What the forest inventory means to game management. Wisconsin Conservation Bulletin 16(3): 8-11, illus. March 1951.
The current inventory of northern and central Wisconsin forests will give game men a detailed picture of the forest cover.

KENDEIGH, S. CHARLES and others. Nature sanctuaries in the United States and Canada--a preliminary inventory. The Living Wilderness 15(35): 1-45, illus. Winter 1950-51.
This inventory lists 691 sanctuaries which have a total area of more than one million square miles. They are classified by biomes and formations (each described); and under each formation or group of formations they are arranged alphabetically by states and sanctuary names. For each sanctuary there is information on its size, degree of modification from its primitive condition, degree of protection, vegetation, and animals. 13 maps show the location of sanctuaries in different formations and in different regions.

WILDLIFE (GENERAL)--MANAGEMENT--Continued

KEESEE, GEORGE W. Second biennial report of the State of North Carolina Wildlife Resources Commission, biennium beginning July 1, 1948 and ending June 30, 1950. 81 pages, illus. Raleigh, N. C. 1950.

This report includes sections on administration, budget, law enforcement, education, fish, game, and engineering. The Game Division report describes wildlife management areas and federal aid research and management projects.

LARRABEE, LEE and others. Thirteenth biennial report. Kansas Forestry, Fish and Game Commission, June 30, 1950. 64 pages, illus. Pratt, Kansas. 1950.

Includes report of the Division of Game (pages 20-24), giving information on the artificial propagation of game birds, quail, pheasants, prairie chicken, seasons and bag limits, migratory game birds, rabbits, and fur bearers; a report of the Division of Federal Aid to Wildlife Restoration Projects (pages 44-47); and an account of the program of cover restoration and habitat improvement (pages 48-50).

LUTTRINGER, LEO A., JR. Pennsylvania's conservation program. Pennsylvania Game News 22(1): 4-11, illus. and 22(2): 12-18, illus. April and May 1951.

The author describes the activities of the Pennsylvania Federation of Sportsmen's Clubs, Izaak Walton League, trappers and archers associations, agricultural organizations, Department of Forests and Waters, Game Commission, Fish Commission, Soil Conservation Commission, the schools, Sanitary Water Board, Pennsylvania Conservation Committee, Pennsylvania Roadside Council, Federation of Women's Clubs, Pennsylvania Parks Association, and Incodel.

MARYLAND GAME AND INLAND FISH COMMISSION. A four year report of the Maryland Game and Inland Fish Commission. January 1947-January 1951. Maryland Conservationist 27(4): 4-9, 28-29, illus. Winter 1950.

Summarizes legislation, capital improvements, finances, new activities, expansion of old activities, and additional personnel.

MEZERIK, A. G. The pursuit of plenty: the story of man's expanding domain. 209 pages. Harper & Bros., New York. 1950. $2.50. (copied from California Fish and Game for April 1951, page 222).

A review by R. M. Paul comments on the author's advocation of strong regional planning organizations to meet the problem of the expanding population. "This book is good for the professional wildlife worker whose perspective is clouded by the maze of petty details. We could well adopt as a motto one of Mezerik's basic concepts that '. . . nowhere can natural resources be evaluated as materials separated from the social organization of the people who are to use them.'"

WILDLIFE (GENERAL)--MANAGEMENT--Continued

NORTHEASTERN FISH AND WILDLIFE CONFERENCE. Proceedings of the Northeastern Fish and Wildlife Conference. Articles paged separately. Wilmington, Delaware. 1951.

More than 30 articles deal with land utilization, wildlife management, and conservation education.

SCHWARTZ, LEONARD. The Department of Conservation, State of Illinois, annual report, 1950. 62 pages, illus. Department of Conservation, Springfield, Ill. 1951?

Work on wildlife is described in reports of the Divisions of Game Management, Game Propagation, Engineering, Law Enforcement, Education and Public Relations, and Accounting.

SCOTT, WALTER E., Compiler. Report to the people of Wisconsin on cover destruction, habitat improvement and watershed problems of the State in 1950. Wisconsin Conservation Bulletin 16(2): 1-78, illus. February 1951.

A section on "Historical Backgrounds" tells of great depletion of forest, prairie, water, and wildlife throughout the State, with particular examples from Richland, Sauk, Barron, and Green Counties. A section on "Cover and Habitat Destruction in 1950" describes soil erosion in different parts of the State, cropland losses, water problems in different parts of the State, drying up and restoration of springs, flood control, drainage, destruction of cover, fires, and tree diseases. And a section on "Improvement of Watersheds in 1950" includes accounts of soil conservation work, grassland agriculture, progress in water problems, forest management, and habitat improvement for fish and wildlife.

STOBIE, GEORGE J. Report of the Commissioner of Inland Fisheries and Game, State of Maine, 1950. 120 pages, illus. Augusta, Maine. 1951?

There is a report by the Acting Deputy Commissioner on the game farm, bounties, deer damage, hunting accidents, and motor vehicles damaged by protected animals. Other reports are on the warden service, hatcheries, engineering activities, wildlife research (details of each project), and inland water survey.

TANNER, N. E. Annual report of the Department of Lands and Forests of the Province of Alberta, for the fiscal year ended March 31st, 1950. 138 pages, illus. Edmonton, Alberta. 1951.

In the Fisheries and Game Administration report an account of the Game Branch summarizes the status of big game, migratory game birds, upland game birds, fur production and registered traplines, predator control, sanctuaries, fur farms, and law enforcement.

WILDLIFE (GENERAL)--MANAGEMENT--Continued

VAUGHN, ERNEST A. and others. Thirty-third annual report of the director and twelfth annual report of the [Maryland] Game and Inland Fish Commission, 1950. 86 pages, illus. Game and Inland Fish Commission, 516 Munsey Bldg., Baltimore 2, Md.

This report describes State game refuges and Pittman-Robertson management centers, game conditions, Federal Aid in wildlife restoration, game propagation, cooperative programs, inland fish management, law enforcement, public relations, and finances. See David H. Wallace and others for a briefer Game and Inland Fish report and reports of other departments.

WALLACE, DAVID H. and others. Maryland Board of Natural Resources, seventh annual report, 1950. 207 pages, illus. Board of Natural Resources, State Office Bldg., Annapolis, Md. 1950.

Contains reports of the Departments of (1) Tidewater Fisheries, (2) Game and Inland Fish, (3) State Forests and Parks, (4) Geology, Mines and Water Resources, (5) Research and Education. The report on game and inland fish describes wildlife properties, game conditions, federal aid activities, inland fisheries, law enforcement, and public relations. See Ernest A. Vaughn and others for a more detailed report on the Department of Game and Inland Fish.

WING, LEONARD W. Practice of wildlife conservation. 412 pages, illus. John Wiley & Sons, Inc., New York. 1951. $5.50.

This is a college textbook that contains enough biology to be usable by those who do not have a complete background in natural history. It discusses the biological base of wildlife management and the techniques of field investigations and practices. It describes in detail the management of different types of wildlife and the wildlife of different environments: farm game, forest game open range game, southern wildlife, far northern wildlife, fur-bearers, wildfowl, lake fish, streams, songbirds, persecuted species. Finally, it discusses wildlife administration and regulation by federal, state, and provincial governments.

WRIGHT, BRUCE S. and others. Wildlife. In Special Supplement, The Forestry Chronicle, Serial No. 104. Pages 61-67. March 1951.

Report of the Wildlife Committee of the Canadian Society of Forest Engineers on activities in the Maritime Provinces, Quebec, Ontario, and Manitoba, and in the Canadian Wildlife Service.

WILDLIFE (GENERAL)--POPULATIONS

ADAMS, LOWELL. Confidence limits for the Peterson or Lincoln index used in animal population studies. The Journal of Wildlife Management 15(1): 13-19, illus. January 1951.

WILDLIFE (GENERAL)--POPULATIONS--Continued

BLOMQUIST, WALLACE. Censusing techniques. North Dakota Outdoors 13(10): 6-8, 15, illus. April 1951.
A description of the techniques used in North Dakota for censusing upland game, big game, furbearers, and migratory waterfowl.

CHITTY, HELEN. Canadian arctic wild life enquiry, 1943-49: with a summary of results since 1939. The Journal of Animal Ecology 19(2): 180-193, illus. November 1950.
"This paper concludes the Canadian Arctic Wild Life Enquiry which has been based on questionnaires sent out annually by the Northwest Territories Administration, Ottawa, and by the Hudson's Bay Company, Winnipeg." Arctic foxes were at a peak in 1933-4, 1937-8, 1941-2, and 1945-6 in northern Quebec and elsewhere. Lemming peaks were in the same years or a year earlier. Snowy owl migrations coincided with the disappearance of lemmings.

GIST, NOEL P. and others, editors. Missouri: its resources, people, and institutions. 605 pages, illus. Curators of the University of Missouri, Columbia, Mo. 1950. $4.00.
Has chapters on climate, geology, soil resources, water resources, mining and minerals, wildlife, forests, archeology, population, cities and towns, agriculture,and 17 other subjects. The wildlife chapter discusses the history of Missouri wildlife, the present status of mammals and birds, conservation of wildlife, and fishes and their environment.

SHELFORD, V. E. Fluctuation of forest animal populations in east central Illinois. Ecological Monographs 21(2): 183-214, illus. April 1951.
This study considers about 40 of a total of about 500 species of invertebrates collected from Trelease Woods. It ".....extends over two periods of extremely low forest populations, 1933-34 and 1941-42, and through one and into a second period of high forest population, 1937-38 and 1945-46-47" Larger populations occurred in periods with more rainfall.

SHELFORD, V. E. Fluctuation of non-forest animal populations in the upper Mississippi basin. Ecological Monographs 21(2): 149-181, illus. April 1951.
"Seven species of invertebrates which come into the woods for the winter were studied; six are discussed. Chinch bug populations were considered back to 1823 for comparison with our collections. The bob-white quail, a forest edge bird, and the cottontail rabbit, a forest-edge mammal, both of which frequent the woods in winter, were considered back to 1925 from published data."

SIIVONEN, LAURI. A survey of game in Finland. Suomen Riista 4: 168-170. 1949.
English summary of a 43-page, illustrated article in Finnish.

WILDLIFE (GENERAL)--RESEARCH

ALASKAN SCIENCE CONFERENCE. Proceedings of the Alaskan Science Conference of the National Academy of Sciences, National Research Council, Washington, November 9-11, 1950. Bulletin of the National Research Council, Number 122. 216 pages, illus. April 1951. $2.00.

These proceedings include (1) abstracts of many technical papers on agriculture and forestry, anthropology, botany, geology and geography, geophysics, meteorology, oceanography, physiology, public health and medicine, and zoology; (2) abstracts of papers presented at symposia on permafrost, health problems, plant ecology and sea ice; (3) talks given at opening and closing sessions and at a general meeting; (4) recommendations.

ANONYMOUS. The Oregon Cooperative Wildlife Research Unit. Oregon State Game Commission Bulletin 6(3): 1, 4-6, illus. March 1951.

An account of 23 projects undertaken since 1935.

MAMMALS--DISEASES

HOLDENRIED, R.; EVANS, F. C.; and LONGANECKER, D. S. Host-parasite-disease relationships in a mammalian community in the central Coast Range of California. Ecological Monographs 21(1): 1-18, illus. January 1951.

"A field study of the California ground squirrel and associated mammals in a natural community at the Calaveras Reservoir and Dam in Alameda and Santa Clara Counties, California, from 1940 to 1945 included the collection and identification of approximately 72,000 ectoparasites, and the inoculation of many of them into laboratory test animals for the detection of disease organisms." 65 species of ectoparasites were found on 28 species of mammals. Plague, tularemia, trypanosomiasis, and relapsing fever were isolated, but no epizootics were observed in the area.

NAKAMURA, MITSURU. A survey of Pasteurella tularensis infection in the Jackson Hole area. Zoologica 35(9): 129-131. August 1950.

This survey took place in Jackson Hole, Wyoming in the summer of 1949. Tularemia was detected in 9 species of mammals, but its local incidence in man was low.

RICHMOND, NEIL D. Field method for collecting mammal ectoparasites. Journal of Mammalogy 32(1): 123-125. February 1951.

MAMMALS--FAUNAS & MANUALS

BARBOUR, ROGER W. The mammals of Big Black Mountain, Harlan County, Kentucky. Journal of Mammalogy 32(1): 100-110. February 1951.

"This paper presents information on thirty-two species and subspecies of mammals known to occur on Big Black Mountain in southeastern Kentucky and adjacent Virginia." It is based on collecting trips made in 1939, 1940, 1946, and 1948.

MAMMALS--FAUNAS & MANUALS--Continued

CAMERON, AUSTIN W. and ORKIN, PHILLIP A. Mammals of the Lake St. John region, Quebec. In Annual report of the National Museum for the fiscal year 1948-1949. National Museum of Canada, Bulletin No. 118. Pages 95-108. 1950. 25¢.

Notes on 35 species in a region that has undergone drastic ecological changes.

DRIVER, ERNEST C. Name that animal. Revised 1950. 558 pages, illus. The Kraushar Press, Northampton, Mass. 1950. $6.50. (copied from California Fish and Game for April 1951, page 222).

A review by Howard R. Leach says, in part, "This is an initial attempt to combine under one cover and by one author the means by which the student and the curious can identify the more common land and fresh-water animals found in the United States." Emphasis is on species occurring east of the Rockies. The book is recommended to the amateur, although it needs better illustrations. See Wildlife Review No. 34, page 3 for an abstract of the first edition.

JOHNSON, MURRAY L.; CHENEY, PHILIP W. ; and SCHEFFER, THEO. H. Mammals of the Grand Coulee, Washington. The Murrelet 31(3): 39-42. September-December 1950.

Notes on 33 species are based on collections made principally in 1948, 1949, and 1950. Records of 4 more are from the vicinity of, but not in, the Coulee.

QUAY, W. B. Observations on mammals of the Seward Peninsula, Alaska. Journal of Mammalogy 32(1): 88-99, illus. February 1951.

These observations on the distribution, life histories, and ecology of 17 species were made during the summer of 1948.

MAMMALS--GENERAL TECHNIQUES

BUCKLEY, JOHN L. and BERGSTROM, WILLIAM H. Paraldehyde as an aid to handling mammals. The Journal of Wildlife Management 15(1): 112-113. January 1951.

MAMMALS--MANAGEMENT

CAHALANE, VICTOR H. A program for restoring extirpated mammals in the National Park system. Journal of Mammalogy 32(2): 207-210. May 1951.

This brief account of what has happened and might happen by way of invasion or restocking takes into account suitability of habitat and possible conflict with local economy.

MAMMALS--MORPHOLOGY & PHYSIOLOGY

HAMILTON, J. B. and others. The growth, replacement, and types of hair. Annals of the New York Academy of Sciences 53(Art. 3): 461-752, illus. March 1951. $4.00.

Among 28 separate articles are ones dealing with "Hair Pattern and Distribution in Mammals", "Development of the Pilary System and the Replacement of Hair in Mammals", and "The Role of the Pilary System in Mammals and its Relation to the Thermal Environment".

WILLIAMSON, V. H. H. Determination of hairs by impressions. Journal of Mammalogy 32(1): 80-84, illus. February 1951.

The author used the plastic Gelva. He describes the procedure and presents an illustrated key to the Ontario genera of Cervidae.

MAMMALS--POPULATIONS

ELSEY, C. A. Abundance of certain mammals of the Geraldton Forest District, Ontario. The Canadian Field-Naturalist 64(5): 159-163, illus. September-October 1950.

Beaver, Canada lynx, marten, fisher, moose, otter, raccoon, timber wolf, wapiti, white-tailed deer, woodland caribou.

MAMMALS--BIG GAME (GENERAL)
(See also MAMMALS--BIG GAME (ELK & MOOSE), Rapson)

BLUNT, FLOYD M. Wyoming's big game survey. Wyoming Wild Life 15(2): 4-9, 35-36, illus. February 1951.

JULANDER, ODELL and others. A review of Utah's big game, livestock, and range relationship problems. U. S. D. A., Intermountain Forest and Range Experiment Station, Research Paper No. 24. 53 pages, illus. September 1950.

This report is organized under (1) background material (range condition, ownership and management, the deer problem, livestock numbers, history of big game, big game grazing, and hunting) and (2) problems and program (competition, proper and actual use of game forage, watershed values and big game, determining game numbers, migration, productivity, and social and economic factors). There is a review of the literature and a list of more than 140 references.

MACE, R. U. The current big game situation. Oregon State Game Commission Bulletin 6(6): 1, 4-8. June 1951.

Condition of the herds; condition of the range; summary of 1950 harvest; problems.

MAMMALS--BIG GAME (DEER)
(See also VEGETATION--COMMUNITIES & HABITATS, Barick; Dasmann)

ADAMS, LOWELL. White-tailed deer browsing on ponderosa pine plantations. U. S. D. A., Northern Rocky Mountain Forest and Range Experiment Station, Research Note No. 89. 5 pages. February 1951.

Description of an experiment begun on the Kootenai National Forest in 1946.

MAMMALS--BIG GAME (DEER)--Continued

CHEATUM, E. L. Disease in relation to winter mortality of deer in New York. The Journal of Wildlife Management 15(2): 216-220. April 1951.
"Results from a study of lungworm, liver fluke and nose bot infestations of white-tailed deer [in the Adirondacks, 1939 through 1943] show a positive correlation between incidence and intensity of infestations by these parasites and the death of deer from 'winter-kill'." Malnutrition and lack of adequate shelter were the principal factors that precipitated death.

CRONEMILLER, F. P. Some dynamics of a mule deer population. The Journal of Wildlife Management 15(2): 206-208. April 1951.
Data from the Interstate Deer Herd (Oregon and California) between 1944 and 1947 show a high breeding potential and great opportunities for improving survival of young, improving habitat, and harvesting the surplus.

DEMMON, E. L. Annual report Lake States Forest Experiment Station, 1950. 31 pages, illus. Lake States Forest Experiment Station, University Farm, St. Paul 1, Minn. 1950?
A section on forest wildlife research describes the ecological study of moose on Isle Royale, Michigan, deer range examinations in Wisconsin, Minnesota and Michigan, and appraisals of porcupine and deer damage in Wisconsin.

ENGLE, JAMES W., JR. Problems of deer herd management. Virginia Wildlife 12(5): 22-24, illus. May 1951.
Problems in Virginia.

KABAT, CYRIL and HALE, JAMES B. Preliminary report on the 1950 deer season. Wisconsin Conservation Bulletin 16(1): 10-12. January 1951.
"The harvest probably topped 200,000--on range claimed to be 'shot out' in 1949 and 1943. Hunter fatalities under any-deer hunting were lower than the average for recent buck seasons. We have a large deer herd left."

MOHLER, LEVI L.; WAMPOLE, JOHN H.; and FICHTER, EDSON. Mule deer in Nebraska National Forest. The Journal of Wildlife Management 15(2): 129-157, illus. April 1951.
Native Rocky Mountain mule deer have restocked most of Nebraska's deer range during the last 20 years. There were evidences of overpopulation in the Bessey Division of the Nebraska National Forest as long ago as the late 1930's, and this resulted in a supervised hunt in December 1945 during which 361 deer were killed. The report includes historical information on mule deer in Nebraska, a description of the Nebraska National Forest, data on the deer herd before, during, and after the hunt, biological data from the checking station, and the results of browse studies. The authors recommend keeping the herds within the carrying capacity of the range.

MAMMALS--BIG GAME (DEER)--Continued

NEWMAN, COLEMAN and GRIFFIN, EDWARD. Deer and turkey habitats and populations of Florida. Florida Game and Fresh Water Fish Commission, Technical Bulletin No. 1. 30 pages, illus. 1950.

"Florida now has approximately 32,000 deer and 26,000 turkey, but habitat is available to support 400,000 deer and 150,000 turkey. It is believed that this increase could take place with comparatively minor damage to agricultural interests ....." This conclusion is supported by a discussion of specific habitats and a discussion of general management procedures. There are useful maps and photos.

PIETSCH, LYSLE R. Is Illinois ready for a deer season? Outdoors in Illinois 17(1): 4-7, illus. Winter 1951.

RICHARDS, TUDOR. History of the white-tailed deer in New Hampshire. Proceedings of the New Hampshire Academy of Science 1(9): 46-52. 1949.

RINEY, THANE. Standard terminology for deer teeth. The Journal of Wildlife Management 15(1): 99-101, illus. January 1951.

SALMI, A. M. The white-tailed deer in Finland. Suomen Riista 4: 124. 1949.

English summary of a 34-page, illustrated article in Finnish. 5 deer were brought from Minnesota in 1934. They have thrived.

SEVERINGHAUS, C. W. A study of productivity and mortality of coralled deer. The Journal of Wildlife Management 15(1): 73-80. January 1951.

Deer were stocked in an 86-acre enclosure in Albany County, New York in 1942 and 1943. They increased at a high rate during a 2-year period when natural foods were abundant. They increased at a low rate during a 2-year period after the area had been overbrowsed.

SWANSON, CARL V. The introduced white-tailed deer in southeastern Washington. The Murrelet 31(3): 43-44. September-December 1950.

There are now an estimated 250 white-tails along the Tuncannon River in the Blue Mountains, following a planting of 10 in 1938. They are competing successfully with mule deer.

WESTERSKOV, KAJ. Observations on deer kill under different systems of hunting. The Journal of Wildlife Management 15(1): 27-32. January 1951.

The author compares for the year 1945 a 22% kill of 4 species in Denmark with a 12% kill of white-tailed deer in Michigan. In Denmark there is a closer check on the herds, much longer seasons, no bag limit, and planned hunting by a small number of hunters. An increase of 60% would make the Michigan harvest equal that in Denmark. There is need for such an increase, but its success would involve regulating the ratio between sex and age classes and removing weaklings.

MAMMALS--BIG GAME (ELK & MOOSE)
(See also MAMMALS--BIG GAME (DEER), Demmon)

ANDERSON, CHESTER C. Experimental feeding of calf elk. Wyoming Wild Life 15(1): 24-27, 38, illus. January 1951.

BUECHNER, HELMUT K.; BUSS, IRVEN O.; and BRYAN, HOMER F. Censusing elk by airplane in the Blue Mountains of Washington. The Journal of Wildlife Management 15(1): 81-87. January 1951.
It was advantageous to combine air and ground counts.

KANGAS, E. On the damage to the forests caused by the moose, and its significance in the economy of the forest. Suomen Riista 4: 88-90. 1949.
English summary of a 26-page, illustrated article in Finnish. The investigations were chiefly on preserves at Evo, Finland, where most of the injury was to aspen, birch, and pine.

MURIE, OLAUS J. The elk of North America. 376 pages, illus. The Stackpole Co., Harrisburg, Pa.' 1951. $6.50.
This book is based on many years of study, particularly of the Yellowstone herds. It discusses early distribution, habitat of the different subspecies, migration, physical characters and habits, reproduction, natural enemies, accidental deaths, parasites, disease, food habits, the population, hunting, and management. There is a 30-page bibliography.

QUIMBY, DON C. and JOHNSON, DONALD E. Weights and measurements of Rocky Mountain elk. The Journal of Wildlife Management 15(1): 57-62. January 1951.

RAPSON, CHARLES M. The Sitgreaves problem. Arizona Wildlife-Sportsman 22(5): 38-43, 66, illus. May 1951.
The West Sitgreaves Management Unit in northern Arizona has been closed to all but elk hunting since 1948. This article reviews the reasons for its closure and describes its present management.

MAMMALS--BIG GAME (ANTELOPE & BISON)
(See also VEGETATION--BRUSHLAND, Bever)

ANONYMOUS. 'Phantoms of the grassland and sagebrush' trapped and transplanted. South Dakota Conservation Digest 18(1): 2-5, illus. January 1951.
83 antelope were taken near Belle Fourche, South Dakota in December 1950. About two-thirds of them were released in Jackson and Tripp Counties, in the south-central part of the State.

BRIDGES, WILLIAM. There's still a chance for the wisent. Animal Kingdom 54(3): 77-79, illus. May-June 1951.
52 males and 67 females were reported from 10 European countries in 1949. 33 calves were born during the preceding 2 years.

RAND, A. L. The 1945 status of the pronghorn antelope, Antilocapra americana (Ord), in Canada. National Museum of Canada, Bulletin No. 106. (Biological Series No. 34). 34 pages, illus. 1947. 25¢.

MAMMALS--FURBEARERS (GENERAL)

ASHBROOK, FRANK G. Annual fur catch of the United States. U. S. D. I., Fish and Wildlife Service, Wildlife Leaflet 315. 25 pages. June 1951.
Summaries for the past several years extend, for most of the states, through the 1949-50 season.

BUTLER, LEONARD. Canada's wild fur crop. The Beaver, Outfit 281, December 1950. Pages 26-31, illus.
It is worth 15 million dollars a year. The muskrat is the most important wild species, the beaver next, the mink third. However, wild and ranch mink fur together are worth more than the crop of muskrat fur.

DeVOTO, BERNARD. Across the wide Missouri. 483 pages, illus. Houghton Mifflin Co., Boston. 1947. $10.00.
"This book deals with the Rocky Mountain fur trade during the years of its climax and decline." (1832-1838). Added to a lively narrative are reproductions in color or black and white of many paintings of trappers, Indians, horses, buffalo, etc. by Alfred Jacob Miller and a few by Charles Bodmer and George Catlin.

HARTESVELDT, RICHARD J. A simple technique for den-use study. The Journal of Wildlife Management 15(1): 104-105, illus. January 1951.
3 successful devices for catching hair use burdock burs or wire; a simple method for studying hair uses clear fingernail polish for holding hair on slides.

MAMMALS--FURBEARERS (MUSKRAT)

ALEXANDER, MAURICE M. The aging of muskrats on the Montezuma National Wildlife Refuge. The Journal of Wildlife Management 15(2): 175-186, illus. April 1951.

The author used 552 muskrats during the 1948 trapping season on the Montezuma Refuge, New York in a study of techniques for aging. Size and appearance of external genitalia were good characters in January. Zygomatic breadth of the skull was the least variable, hence most dependable, measurement.

ANONYMOUS. Small marsh management for fur crops. State of New York Conservation Department, Fish & Wildlife Information Bulletin No. 8. 11 pages, illus. 1950.

Describes suitability of the muskrat for management on farms, development and management of a muskrat marsh, and other values of a muskrat marsh.

ARTIMO, ATSO. Finland a profitable muskrat land: Preliminary report. Suomen Riista 4: 59-61. 1949.

English summary of a 52-page, illustrated article in Finnish. Muskrats have been planted in Finland (since 1922) in at least 216 places. By 1948 they had spread over much of the country. The biggest catch was 240,000 in 1937.

BEER, JAMES R. and MEYER, ROLAND K. Seasonal changes in the endocrine organs and behavior patterns of the muskrat. Journal of Mammalogy 32(2): 173-191, illus. May 1951.

"The investigation includes anatomical data from 237 [Wisconsin] muskrats, from every month of the year, and field observations on seasonal behavior patterns."

DOZIER, HERBERT L. Air inflation as an aid in pelting muskrats. The Journal of Wildlife Management 15(2): 199-205, illus. April 1951.

Air inflation at the Blackwater National Wildlife Refuge, Maryland during the 1948 trapping season did not result in faster skinning, larger pelt grades or greater financial return.

WILLIAMS, ROGER M. The use of scent in live-trapping muskrats. The Journal of Wildlife Management 15(1): 117-118. January 1951.

WILSON, KENNETH A. Muskrat management and water level control. Wildlife in North Carolina 14(2): 8-10, 14-15, illus. February 1951.

About one-fourth of the annual muskrat production of the State comes from Currituck County's 34,000 acres of tidal marshes. Lack of stable water levels is believed to be the main factor in limiting greater production. Wooden dikes are effective in holding water in small areas. Flooding, following burning or mowing, kills a high percentage of undesirable vegetation.

MAMMALS--FURBEARERS (BEAVER)
(See also FISHES, Reid)

GRASSE, JAMES E. Beaver ecology and management in the Rockies. Journal of Forestry 49(1): 3-6. January 1951.

LATHAM, ROGER M. Million dollar conservation triumph. Pennsylvania Game News 21(11): 4-8, illus. and 21(12): 35-40, illus. February and March 1951.
Following their extermination many years before, beaver were reintroduced in Pennsylvania in 1917. More than 6000 were trapped in a 6-weeks season in the 1940's. The author tells why they have been so successful.

WALLIS, ORTHELLO L. Yosemite beavers as of today. Yosemite Nature Notes 30(1): 5-9, illus. January 1951.
Beaver are not native to Yosemite. Those now present have spread into Yosemite from plantings made outside the boundary. They are of the race native to the San Joaquin Valley (Castor canadensis subauratus).

MAMMALS--FURBEARERS (FOXES)

BUTLER, L. Population cycles and color phase genetics of the colored fox in Quebec. Canadian Journal of Zoology 29(1): 24-41, illus. February 1951.
Pelt figures of the Hudson's Bay Company were analyzed to show length of cycle of the colored fox (Vulpes fulva subspecies) in the Province of Quebec. In the central and southern part there is a typical 9-year cycle, while in the northern part (north of the tree line) 9-year and 4-year cycles coexist (the white fox has a 4-year cycle). Isolation, migration, and genetic factors are considered as causes of the fluctuations. The author concludes that the primary cause of migration is pressure in the home area, and that "Migrations will correspond in cycle with that in the area from which they emigrated."--Leonard Llewellyn.

MAMMALS--FURBEARERS (MINK, OTTER, ETC.)

DAVIS, WILLIAM B. Texas skunks. Texas Game and Fish 9(4): 18-21, 31, illus. March 1951.
Descriptions and habits of 6 species.

de VOS, ANTOON. Overflow and dispersal of marten and fisher from wildlife refuges. The Journal of Wildlife Management 15(2): 164-175, illus. April 1951.
Analysis of trappers' fur returns between 1941 and 1947 showed strong indications of overflow of marten and fisher from Chapleau Crown Game Preserve, Ontario.

ELDER, WILLIAM H. The baculum as an age criterion in mink. Journal of Mammalogy 32(1): 43-50, illus. February 1951.

ELDER, WILLIAM H. Determination of weasel sex ratios by pelt examination. The Journal of Wildlife Management 15(1): 114-116. January 1951.

MAMMALS--FURBEARERS (MINK, OTTER, ETC.)--Continued

LIERS, EMIL E. Notes on the river otter (Lutra canadensis). Journal of Mammalogy 32(1): 1-9, illus. February 1951.
Activities and life habits observed by the author during the past 40 years in the wild and in pens in southeastern Minnesota. They include feeding habits, range, dens, breeding, and family life.

SCHEFFER, VICTOR B. Measurements of sea otters from western Alaska. Journal of Mammalogy 32(1): 10-14. February 1951.
Based on 120 individuals taken between 1947 and 1949.

MAMMALS--FURBEARERS (CATS)

HUBBS, EARL L. Food habits of feral house cats in the Sacramento Valley. California Fish and Game 37(2): 177-189, illus. April 1951.
The contents of 184 stomachs, taken throughout the year, contained mostly rodent pests but also included significant numbers of ducks, pheasants, song birds, and rabbits. House cats are of real benefit to farmers but need to be controlled where game production is of primary concern. Sentiment makes control difficult.

POLLACK, E. MICHAEL. Food habits of the bobcat in the New England states. The Journal of Wildlife Management 15(2): 209-213. April 1951.
Predominant items from 208 bobcats taken in New England and New York in 1948 and 1949 were varying hare, deer, cottontail, and porcupine; predominant items in 250 scats collected in Massachusetts were cottontail, deer, varying hare, and field mouse.

MAMMALS--RODENTS (GENERAL)
(See also MAMMALS--RODENTS (MICE & RATS), Hawbecker)

DONDELINGER, NORMAN WESTER. The small mammals of Mount Sanitas, Colorado. M. A. thesis, University of Colorado. 1941.

KELSON, KEITH R. Fluctuations in population of small mammals in Utah. Journal of Mammalogy 32(1): 113-114. February 1951.
Between 1946 and 1948 striking increases took place at lower altitudes in jackrabbits, cottontails, woodrats, and several other small rodents.

KELSON, KEITH R. Speciation in rodents of the Colorado River drainage of eastern Utah. University of Utah Biological Series 11(3): 1-125, illus. February 1951.
The author describes the area, the status of 46 species, and factors involved in speciation.

MAMMALS--RODENTS (MICE & RATS)

CRIDDLE, STUART. The Peromyscus maniculatus bairdii complex in Manitoba. The Canadian Field-Naturalist 64(5): 169-177. September-October 1950.
General characteristics, life history, food, behavior, enemies, etc.

EADIE, W. ROBERT. New techniques in control of orchard mice. Cornell University Agricultural Experiment Station, Bulletin 856. 16 pages, illus. August 1950.
The author describes (1) mechanical distribution of poisoned baits and (2) experiments on tree coatings.

FINDLEY, JAMES S. Habitat preferences of four species of Microtus in Jackson Hole, Wyoming. Journal of Mammalogy 32(1): 118-120. February 1951.

HAWBECKER, ALBERT C. Small mammal relationships in an Ephedra community. Journal of Mammalogy 32(1): 50-60, illus. February 1951.
".....the main concern of this study [in San Benito Co., California] is the interrelationships of three species of Dipodomys, their habitat requirements and limitations, and their relationships to the other small rodents within their areas."

HUNDLEY, JAY W. Indianapolis is solving its rodent control problems. Pest Control 19(5): 9-11, 34, illus. May 1951.
Rats are being controlled by environmental sanitation in residential areas, poultry plants, restaurants, etc. Pest control operators and individuals do the necessary poisoning.

JAMESON, E. W., JR. Local distribution of white-footed mice, Peromyscus maniculatus and P. boylei, in the northern Sierra Nevada, California. Journal of Mammalogy 32(2): 197-203, illus. May 1951.

KING, OTIS M. An ecological study of the Norway rat and the house mouse in a city block in Lawrence, Kansas. Transactions of the Kansas Academy of Science 53(4): 500-528, illus. December 1950.
Ranges were small and were determined by structure of buildings and availability of foods and nesting sites.

KUNS, MERLE L. and RAUSCH, ROBERT. An ecological study of helminths of some Wyoming voles (Microtus spp.) with a description of a new species of Nematospiroides (Heligmosomidae: Nematoda). Zoologica 35(15): 181-188, illus. November 1950.
The authors describe the ecological relationships of 4 species of voles and their parasites in 6 habitats in Jackson Hole, Wyoming during the summer of 1948.

MAMMALS--RODENTS (MICE & RATS)--Continued

McCABE, THOMAS T. and BLANCHARD, BARBARA D. Three species of Peromyscus. 136 pages, illus. Rood Associates, Publishers, Santa Barbara, Calif. 1950.
Report of a 4-year study of general environment, habitat, habit and ecology, sexual cycle, growth and development, molts, temperament, territorial behavior, population, longevity, and reproductive cycle of P. maniculatus gambelii, P. truei gilberti, and P. californicus californicus in an area east of San Francisco Bay.

PARRIS, G. K. Control of mice in watermelon fields. Florida Agricultural Experiment Station, Circular S-17. 4 pages. July 1950.
Peromyscus can be a serious pest by digging up ungerminated seeds. The author describes their habits and tells how to control them.

QUIMBY, DON C. The life history and ecology of the jumping mouse, Zapus hudsonius. Ecological Monographs 21(1): 61-95, illus. January 1951.
This report is based on observations in Minnesota and Wisconsin in 1941-42 and 1946-48.

RAUSCH, ROBERT. Observations on a cyclic decline of lemmings (Lemmus) on the Arctic coast of Alaska during the spring of 1949. Arctic 3(3): 166-177, illus. December 1950.

RAUSCH, ROBERT and SCHILLER, EVERETT L. Hydatid disease (Echinococcosis) in Alaska and the importance of rodent intermediate hosts. Science 113(2925): 57-58, illus. January 19, 1951.
The tapeworm Echinoccocus granulosus is well established in Alaska in dogs and wild canids. Moose and caribou have been known to be intermediate hosts. On St. Lawrence Island the tundra vole now appears as another.

STICKEL, LUCILLE F. Wood mouse and box turtle populations in an area treated annually with DDT for five years. The Journal of Wildlife Management 15(2): 161-164, illus. April 1951.
"A 117-acre area of dense woodland on the Patuxent Research Refuge [Maryland] received an aerial application of DDT in oil at the rate of 2 pounds per acre annually for five years." There were no significant changes in the populations of either species between 1945 and 1949.

WATSON, J. S. Some observations on the reproduction of Rattus rattus L. Proceedings of the Zoological Society of London 120 (Part 1): 1-12. May 1950.
Observations on 2612 rats from buildings in the port of London and 1519 from ships in docks, taken in 1941-43; and 1358 rats in Cyprus in 1947-48.

MAMMALS--RODENTS (MICE & RATS)--Continued

WORTH, C. BROOKE. Indirect evidence supporting observations on the range of wild rodents. Journal of Mammalogy 32(1): 76-79, illus. February 1951.
In 1948 and 1949 the author trapped large numbers of wild rodents in Florida. "Greater numbers of ectoparasites on and more frequent parasitization of adult male cotton rats suggest that they have a wider range than adult females." Continuous trapping in an area depleted the original populations of cotton rats and rice rats. Subsequent continuous catching of adult males indicates that they wandered into the area and again suggests a wider range for males.

MAMMALS--RODENTS (POCKET GOPHERS)

ALDOUS, C. M. The feeding habits of pocket gophers (Thomomys talpoides moorei) in the high mountain ranges of central Utah. Journal of Mammalogy 32(1): 84-87. February 1951.
"A survey of clipped plants under 511 fresh mounds revealed that 48 species were involved in what amounted to almost complete removal of vegetation." 23% of the total was dandelion, 18% Penstemon, 12% Artemisia. The principal foods used in underground foraging were dandelion roots, Stellaria tubers, and Claytonia bulbs.

MILLER, MILTON A. and HOWARD, WALTER E. Size of bait for pocket gopher control. The Journal of Wildlife Management 15(1): 62-68. January 1951.
".....kind of bait, rather than its size, is of paramount importance in strychnine baits for gophers."

MAMMALS--RODENTS (SQUIRRELS)

ATKESON, THOMAS Z. and GIVENS, LAWRENCE. Grey squirrel parasitism by heel fly larvae. The Journal of Wildlife Management 15(1): 105-106. January 1951.
"In some localities subject to heavy heel fly infestation, postponing the opening date of the grey squirrel season until after the first heavy frosts or light freezes occur will increase the attractiveness of the sport and eliminate much needless waste of good table meat."

DAVIS, D. H. S. Notes on the status of the American grey squirrel (Sciurus carolinensis Gmelin) in the south-western Cape (South Africa). Proceedings of the Zoological Society of London 120 (Part 2): 265-268, illus. August 1950.

MARSH, AL. Percentage of breeder squirrel killed during the 1949 season and its effect upon setting the 1950-51 season. Journal of the Tennessee Academy of Science 26(1): 15-21, illus. January 1951.

MAMMALS--RABBITS
(See MAMMALS--RODENTS (GENERAL), Kelson--".....small mammals....."; VEGETATION--FOREST, Roe & Stoeckeler)

MAMMALS--INSECT-EATERS

HARDBERGER, F. MAX. The nine-banded armadillo and the eastward expansion of its range. Turtox News 28(9): 174-177, illus. September 1950.
General characteristics, behavior, and ecology have favored its eastward spread until it is now frequent in all of western Louisiana and rare from there into southwestern Mississippi.

OLIVE, JOHN R. Some parasites of the prairie mole, Scalopus aquaticus machrinus (Rafinesque). The Ohio Journal of Science 50(6): 263-266. November 1950.
42 moles, collected in 3 Ohio counties, had 6 species of parasites. The parasites had little effect on the condition of the host.

MAMMALS--MARINE

ANDREWS, C. W. The hazardous industry of North Atlantic sealing. Animal Kingdom 54(3): 66-76, 94, illus. May-June 1951.
Information on the taking of harp (mostly) and hood seals, and reflections on their populations and the future of the industry.

BARTHOLOMEW, GEORGE A., JR. Spring, summer, and fall censuses of the pinnipeds on San Nicolas Island, California. Journal of Mammalogy 32(1): 15-21, illus. February 1951.
The author made 6 counts between May 1949 and April 1950. The most abundant species, the California sea lion, varied from about 2000 to about 4000 individuals. At least 895 young were born on San Nicolas in 1949. Other species observed were a few Steller sea lions, a single Guadalupe fur seal, more than 100 harbor seals, and from 17 to 168 northern elephant seals.

BARTHOLOMEW, GEORGE A., JR.; COLLYER, ROBERT D.; and DAWSON, WILLIAM R. The sea lion population of Santa Barbara Island, California, in the 1950 breeding season. California Fish and Game 37(1): 65-68, illus. January 1951.

MOORE, JOSEPH CURTIS. The status of the manatee in the Everglades National Park, with notes on its natural history. Journal of Mammalogy 32(1): 22-36, illus. February 1951.
In spite of being persecuted as a source of meat, manatees are thinly scattered over large areas of the Park. The author made observations in 1949 and 1950 on numbers and distribution, habitat, reproduction and parental care, breathing, resting posture, size, intelligence, social behavior, food, and relation to cold.

BIRDS--BIBLIOGRAPHY

BATCHELDER, CHARLES FOSTER. A bibliography of the published writings of William Brewster. Memoirs of the Nuttall Ornithological Club, No. 10. 54 pages. 1951. $2.50 (copied from The Bulletin of the Massachusetts Audubon Society for April 1951, page 165, where the book is reviewed by Francis H. Allen).

LOVELL, HARVEY B. and SLACK, MABLE. A bibliography of Kentucky ornithology. The Kentucky Ornithological Society, Occasional Publication No. 1. 50 pages, illus. 1949. $1.00 (copied from The Auk for January 1951, page 128).

BIRDS (GENERAL)--COMMUNITIES & HABITATS

HEIL, RUTH M. A comparative study of the bird populations of a hedge row and a slough in south central Kansas. M. A. thesis, University of Colorado. 1941.

MILLER, ALDEN H. A comparison of the avifaunas of Santa Cruz and Santa Rosa Islands, California. The Condor 53(3): 117-123. May-June 1951.

"The differences in the avifaunas are somewhat more numerous than previously thought. Most of them do not seem explicable clearly on the grounds of habitat differences on the two islands but rather by the vagaries of insular dispersal or island hopping....."

MORRISON, KENNETH D. and HERZ, JOSEPHINE DANEMAN. Where to find birds in Minnesota--a guide to 62 birding areas, parks and sanctuaries. 122 pages, illus. The Webb Publishing Co., St. Paul, Minn. $1.50 (copied from The Flicker for December 1950, page 130, where the book is reviewed by Dwain W. Warner).

RINER, ALICE. A comparative field study of winter birds in an orchard and on a river bank in southern central Kansas. M. A. thesis, University of Colorado. 1941.

SEATON, VELMA. The winter birds of two contrasting woodland areas in Swope Park, Kansas City, Missouri. M. S. thesis, University of Colorado. 1943.

BIRDS (GENERAL)--FAUNAS & MANUALS

ANONYMOUS. Check list of the birds seen in the vicinity of Hartford, Connecticut. 20 pages. Hartford Bird Study Club, Inc., 60 Gold St., Hartford 3, Conn. 1951. 50¢.

Frequency and season for 235 species found within 15 miles of Hartford; full details on 57 more very rare species.

BIRDS (GENERAL)--FAUNAS & MANUALS--Continued

FRIEDMANN, HERBERT. The birds of North and Middle America. United States National Museum, Bulletin 50, Part XI. 793 pages, illus. 1950. $4.00 from Government Printing Office.

This volume describes the birds of 4 families: vultures, hawks and eagles, ospreys, falcons.

GODFREY, W. EARL. Birds of the Cypress Hills and Flotten Lake regions, Saskatchewan. National Museum of Canada, Bulletin No. 120 (Biological Series No. 40). 96 pages, illus. 1950. 25¢.

The Cypress Hills are in southwestern, Flotten Lake in central western, Saskatchewan. Each area has coniferous and deciduous forest; the Cypress Hills also have much land that is treeless. An annotated list of birds occupies most of the bulletin.

GULLION, GORDON W. Birds of the southern Willamette Valley, Oregon. The Condor 53(3): 129-149, illus. May-June 1951.

Describes the environment and the status of 212 species.

HERNDON, LEE R. Birds of Carter County, Tennessee. The Migrant 21(4): 57-68. December 1950.

Carter County is in mountainous northeastern Tennessee. This annotated list includes observations made since 1944. Of especial interest is the quick response of water birds to Wautauga Lake, the impoundment of which began only 2 years ago.

POUGH, RICHARD H. Audubon water bird guide: water, game and large land birds, eastern and central North America from southern Texas to central Greenland. 352 pages, illus. Doubleday & Company, Inc., Garden City, N. Y. 1951. $3.50.

48 plates in the center of the book show the birds in color and are the key to their identity. Black and white drawings through the text show many of the species in flight. All of the illustrations are large and clear, considering the compactness of the book. The descriptions deal with identification, habits (in considerable detail), voice, nest, and range.

SALOMONSEN, FINN. The birds of Greenland. Part I. 158 pages, illus. Einar Munksgaard, Copenhagen, Denmark. 1950. $9.00 (copied from Bird-Banding for January 1951, page 42).

A review by D. S. Farner says, in part, that "As a source of important information on several interesting arctic elements of the American avifauna this treatise is heartily recommended to American ornithologists." Part I includes loons, fulmars, shearwaters, petrels, cormorants, ducks, and geese. There are 16 colored plates. The text is in both Danish and English.

WILSON, GORDON. The Woodburn lakes since 1939. The Kentucky Warbler 27(1): 1-6, illus. February 1951.

Tabulation and discussion of the large number of water birds (60 species in 1950) and their environment at 2 wet-weather lakes near Bowling Green, Ky.

BIRDS--GENERAL TECHNIQUES

HOLLOM, A. D. Trapping methods for bird ringers. British Trust for Ornithology, Field Guide Number One. 40 pages. The Potter Press, 29, St. Giles, Oxford. 1950. 2 shillings and sixpence (copied from The Journal of Wildlife Management for October 1950, page 470).

BIRDS--WATERFOWL

COBURN, DON R.; METZLER, DAVID W.; and TREICHLER, RAY. A study of absorption and retention of lead in wild waterfowl in relation to clinical evidence of lead poisoning. The Journal of Wildlife Management 15(2): 186-192, illus. April 1951.

"The critical daily dosage level was found to be between 6 and 8 mg./kg."

ENGELING, GUS A. Mottled duck movements in Texas. Texas Game and Fish 9(5): 2-5, illus. April 1951.

EVANS, CHARLES D. A method of color marking young waterfowl. The Journal of Wildlife Management 15(1): 101-103. January 1951.

134 chicken eggs and 129 wild duck eggs were injected with dyes; 23 dyes were tested; and a technique of injection was developed (it is described).

GLOVER, FRED ARTHUR. Nesting and production of waterfowl in northwest Iowa: with special reference to the blue-winged teal (Anas discors Linnaeus). Iowa State College Journal of Science 25(2): 227-229. January 1951.

This abstract of a doctoral thesis describes a study made in 1947, 1948, and 1949 to develop a method for determining yearly productivity prior to the hunting season, to compare present and past productivity, to analyze factors affecting waterfowl in Iowa, and to recommend management procedures for northwest Iowa.

GULLION, GORDON W. A marker for waterfowl. The Journal of Wildlife Management 15(2): 222-223, illus. April 1951.

A marker of 2-colored, vari-patterned Vinylite was used successfully with breeding coots.

HANSON, HAROLD C. Notes on the artificial propagation of wood duck. The Journal of Wildlife Management 15(1): 68-72, illus. January 1951.

An experiment in Illinois in 1944.

JAQUES, FLORENCE PAGE. Delta revisited. The Beaver, Outfit 281, March 1951, pages 5-9, illus.

An account of summer activities at the waterfowl research station at Delta, Manitoba.

BIRDS--WATERFOWL--Continued

LUMSDEN, H. G. Breeding diving ducks on Lake St. Clair, Ontario. The Canadian Field-Naturalist 65(1): 31-32. January-February 1951.

The author describes the marshes and their production in 1949 of at least 50 redheads and a few ruddies.

NELSON, HARVEY K. A study of waterfowl sex ratios during spring migration--Minnesota, 1950. The Flicker 22(4): 114-120, illus. December 1950.

Observations were made in April and May at 8 lakes and several potholes. The average sex ratio for all species of river ducks was 1.3:1; for all species of diving ducks it was 2:1.

SCHREINER, KEITH M. and HENDRICKSON, GEORGE O. Wood duck production aided by nesting boxes, Lake Odessa, Iowa, in 1950. Iowa Bird Life 21(1): 6-10. March 1951.

SHARP, WARD M. Observations on predator-prey relations between wild ducks, trumpeter swans and golden eagles. The Journal of Wildlife Management 15(2): 224-226. April 1951.

At Red Rock Lakes, Montana, during the winters of 1944 to 1947, a pair of golden eagles killed several goldeneyes, mallards, and cygnets and stimulated unrest among the ducks and swans.

SLAVIK, WALTER and UHLER, FRANCIS M. The Potomac basin: 3. Where are the ducks? The Atlantic Naturalist 6(4): 143-150, illus. March-April 1951.

Silt, salt water, carp, waterchestnut, dredging, and filling have all contributed to the degradation of the tidal Potomac as a habitat for waterfowl.

WILLIAMS, C. S. and others. Waterfowl populations and breeding conditions--summer 1950, with notes on woodcock and Wilson snipe. U. S. D. I., Fish and Wildlife Service, and Canadian Dept. of Resources and Development, Canadian Wildlife Service, Special Scientific Report: Wildlife No. 8. 256 pages, illus. 1950?

Nearly 50 separate reports deal ganerally or locally with conditions in Alaska, all of the Canadian provinces and territories, and 30 states.

YOCOM, CHARLES F. Breeding status of the ring-necked duck in Washington. The Condor 53(1): 47-49, illus. January-February 1951.

The records for both southern British Columbia and eastern Washington may represent relatively new breeding areas for this species. In this region the ring-necked duck breeds in the forested regions and is thus segregated from the lesser scaup, which breeds in the grassland regions.--John W. Aldrich.

BIRDS--FISH-EATERS

WOODBURY, ANGUS M. and KNIGHT, HOWARD. Results of the Pacific gull color-banding project. The Condor 53(2): 57-77, illus. March-April 1951.

Beginning in 1937 under the auspices of the Western Bird Banding Association, western, glaucous-winged, and California gulls were color-banded and the recoveries and sight observations systematically recorded. The area covered was from North Coronado Island, Mexico, northward to the Gulf of Georgia, B. C., and, during the later part of the study, eastward to Great Salt Lake. The study continued until 1946. Gulls which nest along the coast simply move back and forth along the coast while those that nest inland (California gull) migrate toward the coast and back and have the greatest range of geographic movement.--John W. Aldrich.

BIRDS--RAILS

ONEY, JOHN. Fall food habits of the clapper rail in Georgia. The Journal of Wildlife Management 15(1): 106-107. January 1951.

61 kinds of food were found in 284 gizzards. 10 kinds made up 97% of the total volume of food (crabs more than 70%, snails about 15%, insects nearly 10%).

BIRDS--SHOREBIRDS
(See also BIRDS--WATERFOWL, Williams & others)

REEDER, WILLIAM G. Stomach analysis of a group of shorebirds. The Condor 53(1): 43-45. January-February 1951.

This study is based on 27 birds of 8 species, collected in Orange and Ventura Cos., California in May 1949. The differences in feeding habits of the sand-beach feeding and mud-flat feeding shorebirds were significant. In most cases the birds are adapted to feed on the more common of available animals, which are immature sand crabs on the beaches and polychaete annelids on the mud flats. A greater yellow-legs and a dowitcher had eaten large quantities of mud-burrowing fish (Fundulus and mud-burrowing goby). Willets fed on the crab, Hemigrapsus, in the Salicornia marshes.--John W. Aldrich.

BIRDS--UPLAND GAME (GENERAL)

EMERSON, K. C. A list of Mallophaga from gallinaceous birds of North America. The Journal of Wildlife Management 15(2): 193-195. April 1951.

KAUFFMAN, H. H. Mating, nesting, brooding habits of guineas, turkeys, ringneck pheasants. Modern Game Breeding 21(2): 8-10. February 1951.

BIRDS--UPLAND GAME (BOBWHITE & OTHER QUAIL)

BARBOUR, ROGER W. Observations on the fall and winter food of bob-white quail in Kentucky. The Journal of Wildlife Management 15(1): 108. January 1951.

The principal foods in 331 stomachs, collected from 3 widely separated counties in 1941 and 1942, were Korean lespedeza, ragweed, corn, tick-trefoil, and common lespedeza.

BENNITT, RUDOLF. Some aspects of Missouri quail and quail hunting, 1938-1948. Missouri Conservation Commission, Technical Bulletin No. 2. 51 pages, illus. 1951.

This report deals with (1) "The establishment of an index to quail abundance based on the frequency of bobwhite calls recorded in midsummer" and the relation of this index to hunting success, (2) the relation of quail production to soil fertility, (3) composition of the population, and (4) the hunting season.

HUNTER, CARL; RUSH, DONALD E.; and WADE, LESTER. Quail food and cover plantings in Arkansas. 11 pages, illus. Arkansas Game and Fish Commission, Little Rock, Ark. 1950.

The authors emphasize the value of border strips and tell how to establish and maintain them.

JACKSON, ALFRED S. The bobwhite quail in relation to land management in the Western Cross Timbers. Texas Game, Fish & Oyster Commission, F A Report Series-No. 7. 47 pages, illus. February 1951.

The area reported upon comprises 2½ million acres of deep sandy soils, characterized by post oak and blackjack oak, in north central Texas. Poor land use has decreased productivity for both crops and quail. ".....summer range may have a lower level of security than winter range." Hunting pressure should be regulated.

LONGLEY, WILLIAM H. Bobwhite quail. (Part one and part two). The Conservation Volunteer 14(80): 27-31. January-February 1951 and 14(81): 29-31. March-April 1951.

Part one deals with cover and food, part two with distribution and population changes in Minnesota.

MacGREGOR, WALLACE, JR. and INLAY, MANLEY. Observations on failure of Gambel quail to breed. California Fish and Game 37(2): 218-219. April 1951.

From observations in the Colorado and Mojave Deserts in 1950 it appears that lack of green feed is responsible for Gambel quail failing to breed.

PETRIDES, GEORGE A. Notes on age determination in juvenal European quail. The Journal of Wildlife Management 15(1): 116-117. January 1951.

BIRDS--UPLAND GAME (BOBWHITE & OTHER QUAIL)--Continued

WINT, GEORGE B. Improved method for marking game birds for identificatin in the field. Bulletin of Oklahoma Agricultural and Mechanical College 48(3): 1-7, illus. (Biological Series No. 3). January 1951.
Plastic markers were used on more than 1000 bobwhites. They were visible for 50 yards or more. Most of them stayed on for at least 2 months.

BIRDS--UPLAND GAME (PHEASANT)

BALL, K. E. Breeding behavior of the ring-necked pheasant on Pelee Island, Ontario. The Canadian Field-Naturalist 64(6): 201-207, illus. November-December 1950.
Report of a study made in 1946, 1947, and 1948.

BUSS, IRVEN O.; MEYER, ROLAND K.; and KABAT, CYRIL. Wisconsin pheasant reproduction studies based on ovulated follicle technique. The Journal of Wildlife Management 15(1): 32-46, illus. January 1951.
"Year after year a very high percentage of all game-farm and wild hens observed began laying by mid-April in Wisconsin." "Laying eggs at random and deserting one or two nests probably represents typical behavior for a wild hen; ....." Productivity in two dissimilar areas in southern Wisconsin appeared to be due to difference in range conditions.

DALE, FRED H. Ringneck pheasant management. U. S. D. I. Fish and Wildlife Service, Wildlife Leaflet 332. 3 pages. January 1951.

HARPER, HAROLD T.; HART, CHESTER M.; and SHAFFER, DALE E. Effects of hunting pressure and game farm stocking on pheasant populations in the Sacramento Valley, California, 1946-1949. California Fish and Game 37(2): 141-176, illus. April 1951.
"The greatest benefit to be derived from game farm pheasants is to plant cocks shortly before or during the season in areas where hunting pressure is high."

KABAT, CYRIL; THOMPSON, DONALD R.; and KOZLIK, FRANK M. Changes in pheasant weights and wing molt in relation to reproduction with survival implications. Wisconsin Conservation Department, Technical Wildlife Bulletin Number 2. 26 pages, illus. 1950.

SIEGLER, HILBERT R. The ring-necked pheasant in New Hampshire. Proceedings of the New Hampshire Academy of Science 1(9): 33-46, illus. 1949.

STUART, RUSSELL W. The pheasant in the forties! North Dakota Outdoors 13(11): 4-6, illus. May 1951.
The foundation of the large population that reached a peak in 1944 was the birds that moved into southeastern North Dakota from South Dakota. "The problem confronting us today in pheasant management is the restoration of well distributed habitat so that the necessary minimum of winter food and cover as well as nesting cover will be provided....."

BIRDS--UPLAND GAME (GROUSE)
(See also VEGETATION--COMMUNITIES & HABITATS, Barick)

ERICKSON, ARNOLD B. Closed season no boon to ruffed grouse. The Conservation Volunteer 14(80): 34-36, illus. January-February 1951.
From an open season every fall since 1940, Michigan has evidence that hunting during a cyclic low does not have a bad effect on hunting at other times of the cycle. Minnesota should profit from that experience.

HALE, JAMES B. and WENDT, ROBERT F. Ruffed grouse hatching dates in Wisconsin. The Journal of Wildlife Management 15(2): 195-199. April 1951.
45 of 69 broods in northern Wisconsin hatched in the 2 weeks between May 27 and June 9, 1949. All broods hatched between April 29 and June 30, indicating an apparent high success of first nests and lack of renesting.

JANSON, REUEL G. Determining age and sex of grouse! South Dakota Conservation Digest 18(1): 8-10, illus. January 1951.
Age of sharptailed and pinnated grouse can be told by the bursa and the outermost wing feathers, sex by the middle tail feathers.

NEWMAN, WILLIAM L. Notes on trapping sharptail grouse in Manitoba. The Journal of Wildlife Management 15(2): 223-224. April 1951.
Traps with two rows of bobs were much more effective than those with one in catching sharptails at Langruth and Delta, Manitoba in the winter of 1948.

BIRDS--UPLAND GAME (WILD TURKEY)
(See also MAMMALS--BIG GAME (DEER), Newman & Griffin)

BAILEY, R. WAYNE; UHLIG, HANS G.; and BREIDING, GEORGE. Wild turkey management in West Virginia. Conservation Commission of West Virginia, Division of Game Management, Bulletin No. 2. 50 pages, illus. 1951.
Censuses of West Virginia's turkeys were taken in 1944-45 and 1949-50. In the latter they were found in 26 counties, which include most of the suitable range. This report discusses habits, environmental factors, hunting, management of food and cover, refuges, winter feeding, artificial propagation, and restocking. The turkey population is expected to remain for some time at about its present level.

CRAIG, FRANK R. and BARKALOW, FREDERICK S., JR. Blackhead in wild turkeys on free range in North Carolina. Wildlife in North Carolina 14(2): 18-19, illus. February 1951.
Found in Halifax County in 1948.

PEERY, CHARLES H. Restoring the wild turkey in the Old Dominion. Virginia Wildlife 12(4): 16-17, 23, illus. April 1951.
Through restocking and food planting.

BIRDS--UPLAND GAME (WILD TURKEY)--Continued

WALKER, EUGENE A. A study of factors influencing wild turkey populations in the live oak-shin oak divide area of the Edwards Plateau of Texas. Texas Game, Fish and Oyster Commission, F A Report Series-No. 6. 45 pages, illus. February 1951.

BIRDS--UPLAND GAME (DOVES)

SCHWARTZ, CHARLES W. and SCHWARTZ, ELIZABETH REEDER. A survey of the lace-necked dove in Hawaii. Pacific Science 5(1): 90-107, illus. January 1951.

Lace-necked doves are permanent residents on many types of land on all of the major islands. Their estimated population is nearly 90,000, and densities are as great as 200 birds to the square mile. Good range has fresh or brackish surface water or succulent fruit. 80% of the food is seeds or pods.

STILWELL, HART. Saved by a grapefruit tree. Field & Stream 55(11): 36-37, 102-103, illus. March 1951.

With the removal of native brush in southern Texas, white-winged doves seemed to be headed for extermination. Now they are nesting in citrus groves and the population is increasing.

BIRDS--HAWKS & OWLS
(See also BIRDS--WATERFOWL, Sharp)

HAMERSTROM, F. N., JR., and HAMERSTROM, FRANCES. Food of young raptors on the Edwin S. George Reserve. The Wilson Bulletin 63(1): 16-25, illus. March 1951.

Of 262 food items from young Cooper's hawks in the nests, 84.4% were small to medium-sized birds and 15.6% were small mammals. Food of young red-tailed hawks was largely small mammals, plus a few birds, amphibians, snakes, and insects.--John W. Aldrich.

JAMES, R. F. and MARTIN, N. D. A study of screech owls in southern Ontario. The Canadian-Field Naturalist 64(5): 177-180, illus. September-October 1950.

"Over a thousand nail kegs were converted into roosting houses for screech owls and placed in trees throughout southern Ontario." Entirely or partly eaten food in the kegs included 4 species of mammals, 14 species of birds, fish, and crayfish. 5 other species of birds and 6 species of mammals have nested or roosted in the kegs.

PHILLIPS, RICHARD S. Food of the barn owl, Tyto alba pratincola, in Hancock County, Ohio. The Auk 68(2): 239-241. April 1951.

85% of the contents of pellets collected from 3 different locations near Findlay, Ohio were remains of meadow mouse, Microtus pennsylvanicus. One-third of 1% of the contents were remains of game species.

BIRDS--HAWKS & OWLS--Continued

SPRUNT, ALEXANDER, JR. Hawk predation at the bat caves of Texas. The Texas Journal of Science 2(4): 462-470, illus. December 1950.

In 1949 and 1950 the author noted predation by red-tailed, Cooper, sharp-shinned, and duck hawks on 10 of a total of 12 trips to Ney Cave, Medina Co., Texas. Its effect on a bat population estimated at 20-30 million is inconsequential.

BIRDS--SONGBIRDS

HAMILTON, W. J., JR. The food of nestling bronzed grackles, Quiscalus quiscula versicolor, in central New York. The Auk 68(2): 213-217. April 1951.

The author examined the food of 130 young birds in 1947, 1948, and 1949. Nearly half of the food was insects, with beetles and lepidopterous larvae predominating. Other foods which bulked from 11% of the total down to 3% were earthworms, amphibians, fish, spiders, molluscs, sowbugs, and green grass.

NERO, ROBERT W. and EMLEN, JOHN T., JR. An experimental study of territorial behavior in breeding red-winged blackbirds. The Condor 53(3): 105-116, illus. May-June 1951.

This article describes nest-moving experiments at Madison, Wisconsin in 1949.

ROBBINS, CHANDLER S.; SPRINGER, PAUL F.; and WEBSTER, CLARK G. Effects of five-year DDT application on breeding bird population. The Journal of Wildlife Management 15(2): 213-216. April 1951.

"Aerial applications of DDT in oil at the rate of 2 pounds per acre applied over a four-year interval on bottomland forest [Patuxent Research Refuge, Maryland] resulted in a 26 percent decrease in the breeding bird population by the fifth spring." Redstart, parula warbler, and red-eyed vireo accounted for all of this decrease.

AMPHIBIANS & REPTILES
(See also MAMMALS--RODENTS (MICE & RATS), Stickel)

BABBITT, LEWIS H. and BABBITT, CORINNE H. A herpetological study of burned-over areas in Dade County, Florida. Copeia 1951 (1): 79. March 1951.

Many reptiles and amphibians were found killed or injured by fire, but some were found unharmed. It is not known whether or not the latter entered the areas after the fires.--W. H. Stickel.

CHANEY, ALLAN H. The food habits of the salamander Amphiuma tridactylum. Copeia 1951 (1): 45-49. March 1951.

Foods of 180 Louisiana specimens were much varied, but were chiefly crayfish and earthworms. The author considers availability important in determining the foods taken. Hunting and feeding habits are described.--W. H. Stickel.

AMPHIBIANS & REPTILES--Continued

DICKINSON, W. E. Field guide to the lizards and snakes of Wisconsin. Milwaukee Public Museum, Popular Science Handbook Series No. 2. 70 pages, illus. 1949. 75¢.

Karl P. Schmidt reviews this bulletin on page 163 of the June 1950 Copeia.

LEWIS, THOMAS HOWARD. The biology of Leiolopisma laterale (Say). The American Midland Naturalist 45(1): 232-240, illus. January 1951.

Report of a field and laboratory study made chiefly at Houston, Texas. Subjects include description, habitat, activity periods, locomotion, fighting, reproduction, food habits, and cannibalism.--W. H. Stickel.

MILNE, LORUS J. and MILNE, MARGERY J. Notes on the behavior of horned toads. The American Midland Naturalist 44(3): 720-741, illus. November 1950.

A readable and comprehensive account of the natural history of Phrynosoma, with emphasis on P. cornutum and P. douglassii. Topics include foods and feeding, enemies, defense, water needs, thermal relationships, reproduction, shedding, and blood ejection. There is an annotated bibliography of 115 titles.--W. H. Stickel.

MILSTEAD, WILLIAM W.; MECHAM, JOHN S.; and McCLINTOCK, HASKELL. The amphibians and reptiles of the Stockton Plateau in northern Terrell County, Texas. The Texas Journal of Science 2(4): 543-562, illus. December 1950.

56 species were collected in the area in June and July 1949. The authors list them, with annotations, describe plant-animal associations, and discuss the geography of the herpetofauna. See Wildlife Review No. 62, pages 13 (Hermann) and 54 (Webster) for surveys of mammals and vegetation of northeastern Terrell County.

NEILL, WILFRED T. Amphibians and reptiles of a fifteen-acre tract in Georgia. The American Midland Naturalist 45(1): 241-244. January 1951.

The author and his students censused as completely as possible the herpetofauna of an area of park-like stream bottom pasture. The history, fauna, and flora of the study area are described.-- W. H. Stickel.

SCHRODER, ROBERT CRAIG. Hibernation of blue racers and bull snakes in western Illinois. Natural History Miscellanea No. 75. Pages 1-2, illus. December 1950.

A den, apparently an old mammal burrow, is described and figured. The tunnel was blocked with sand. Temperature of soil and snakes on February 11 was 44° F., but the snakes were capable of some motion.--W. H. Stickel.

STILLE, W. T. The loss of jaw-tags by toads. Natural History Miscellanea No. 74. Pages 1-2. November 1950.

Jaw-tags may be lost in a year, by movement through the bone and soft tissues. Only a small swelling on the jaw indicates that a specimen had been marked. Various stages of tag loss are described.--W. H. Stickel.

AMPHIBIANS & REPTILES--Continued

WERLER, JOHN E. and McCALLION, JAMES. Notes on a collection of reptiles and amphibians from Princess Anne County, Virginia. The American Midland Naturalist 45(1): 245-252, illus. January 1951.
Local distribution, habitats, abundance, and miscellaneous observations for 58 forms of the Dismal Swamp region.--W. H. Stickel.

WOODBURY, ANGUS M. and others. Symposium. A snake den in Tooele County, Utah. Herpetologica 7(1): 1-52, illus. March 1951.
This set of 7 papers is a report on a 10-year study by Dr. Woodbury and his students. Snakes chiefly studied were Great Basin rattler and western striped racer. Topics treated include marking methods (tattoo preferred), survivorship, temperatures at entrance and emergence, sex ratios, egg production, growth and age, correlation of color with habitat, effect of venom on rattlesnakes. There are many tables and graphs.--W. H. Stickel.

FISHES

HOWARD, GERALD V. and GODFREY, EILEEN R. Fishery research and educational institutions in North and South America. 85 pages. Food and Agriculture Organization of the United Nations, Washington, D. C. December 1950.

REID, KENNETH A. Planning for wildlife on a managed forest. Journal of Forestry 49(6): 436-439. June 1951.
Timber, fish, and beaver management on the 96,000-acre Whitney Park in the Adirondacks of Northern New York.

TAYLOR, HARDEN F. and others. Survey of marine fisheries of North Carolina. 555 pages, illus. The University of North Carolina Press, Chapel Hill, N. C. 1951. $10.00.
3 parts deal with: hydrography of the State's marine waters, natural history of the economic species, and economics of the fisheries. There is a wealth of information on widely ranging species. Species and groups of species discussed in the second part are menhaden, edible finfishes, oyster and other mollusks, shrimps, blue crab, diamond-back terrapin, seaweed, and marine angling. A review by Daniel Merriman on page 323 of the April 1951 American Scientist points out that the book contains a comprehensive view of the economics of national and world fisheries and emphasizes its importance to biologists, economists, sociologists, fishermen, and the general public.

INVERTEBRATES (GENERAL)

STEPHENSON, T. A. and ANNE. Life between tide-marks in North America. I. The Florida Keys. The Journal of Ecology 38(2): 354-402, illus. November 1950.
The authors describe zonation of the common plants and animals and discuss its significance.

MOLLUSKS

VAN DER SCHALIE, HENRY. The land and fresh-water mollusks of Puerto Rico. Museum of Zoology, University of Michigan, Miscellaneous Publications No. 70. 134 pages, illus. August 1948. $2.50.

MYRIAPODS

AUERBACH, STANLEY I. The centipedes of the Chicago area with special reference to their ecology. Ecological Monographs 21(1): 97-124, illus. January 1951.

INSECTS

VAN BREDERODE, HENDRIK and others. Proceedings of the thirty-seventh annual meeting of the New Jersey Mosquito Extermination Association, held at Atlantic City, New Jersey, March 1, 2 and 3, 1950. 214 pages, illus. New Brunswick, N. J.

Comprises about 40 papers, not confined to New Jersey conditions.

WILLIAMS, LELIA ANN and HOFF, C. CLAYTON. Fleas from the Upper Sonoran zone near Albuquerque, N. Mex. Proceedings of the United States National Museum 101(3278): 305-313, illus. 1951.

19 species taken in 1948 and 1949 from 7 species of rodents (more than 140 individuals).

CRUSTACEANS

GOWANLOCH, JAMES NELSON. Crayfish in Louisiana. Louisiana Conservationist 3(8): 13-16, 20-23, illus. April 1951.

Deals particularly with the habits and economics of the red swamp crayfish, Cambarus clarkii.

PENN, GEORGE HENRY. Utilization of crawfishes by cold-blooded vertebrates in the eastern United States. The American Midland Naturalist 44(3): 643-658, illus. November 1950.

"A review of 108 papers on food habits of fishes, amphibians and reptiles in eastern United States points to the importance of crawfishes in the diet of some of these animals. Knowledge of the productivity and reproductive potential of crawfishes is given along with brief notes on each of the twelve most important species indicated in the food habits studies reviewed."

VEGETATION--COMMUNITIES & HABITATS

BARICK, F. B. The edge effect of the lesser vegetation of certain Adirondack forest types with particular reference to deer and grouse. Roosevelt Wildlife Bulletin 9(1): 1-146, illus. August 1950. $1.00.
This study was made on a 4000-acre area the vegetation of which was dominated by 6 kinds of trees, 1 shrub, and 3 herbs. The author reviews the literature, describes the collection of data and their analysis, and discusses the composition of 10 edges with reference to grouse and deer. Both deer and grouse preferred northern hardwood and spruce flat forest.

DASMANN, WILLIAM P. Some deer range survey methods. California Fish and Game 37(1): 43-52, illus. January 1951.
The line-point method and the line-interception method of sampling vegetation cover, when coupled with checks on shrub and tree form and age classes and with checks on forage utilization, will inform about the present condition and current trend of deer range. The author believes such data are basic to intensive deer management.

HORTON, J. S. Vegetation. In Some aspects of watershed management in southern California. California Forest & Range Experiment Station, Miscellaneous Paper No. 1. Pages 10-17. April 1951.
Describes 4 types of chaparral, 2 types of woodland, and 5 types of forest.

McMINN, ROBERT G. The vegetation of a burn near Blaney Lake, British Columbia. Ecology 32(1): 135-140, illus. January 1951.
Types of vegetation studied were rock, swamp, tangles, bracken, conifers, and deciduous trees. Some factors influencing the course and rate of succession were relicts, edaphic conditions, distribution of conifers in relation to seeding, and high temperatures and low humidities.

MUNZ, PHILIP A. and KECK, DAVID D. California plant communities--supplement. El Aliso 2(3): 199-202. November 1950.
The authors add 4 new plant communities to their list published in 1949 (see Wildlife Review No. 60, page 54).

POLUNIN, NICHOLAS. Botany of the Canadian eastern arctic. Part III, Vegetation and ecology. National Museum of Canada, Bulletin No. 104 (Biological Series No. 32). 304 pages, illus. 1948. 75¢.
This book treats, in turn, the plant communities of (1) Ellsmere, (2) Devon, Cornwallis, and Somerset Islands, (3) northern Baffin, (4) central Baffin, (5) southern Baffin, (6) Melville Peninsula, (7) northernmost Labrador, (8) northern Quebec, (9) islands in Hudson and Ungava Bays, and (10) west coast of Hudson Bay. Many photos supplement the text.

RAVEN, KARL ARTHUR. Ecology of a timberline area in the Colorado Front Range. M. A. thesis, University of Colorado. 1949.

VEGETATION--COMMUNITIES & HABITATS--Continued

WHITTAKER, ROBERT H. A criticism of the plant association and climatic climax concepts. Northwest Science 25(1): 17-31, illus. February 1951.
The author believes that neither concept is based on reality and that each must be abandoned. Succession is a reality, but it ".....does not really lead to a regional climax type; it leads to some kind of climax suited to the specific conditions of the site where succession occurs. Since there is always a variety of moisture conditions in mature topography, succession, on a time-scale which can reasonably concern ecologists, can only lead to a variety of climax types." A mosaic chart, which takes into account variations in elevation and moisture, shows the complex climax pattern in the Great Smoky Mountains.

VEGETATION--FLORAS & MANUALS

DODGE, NATT N. Flowers of the Southwest deserts. 112 pages, illus. Southwestern Monuments Association, Popular Series No. 4. 1951. $1.00.
This booklet has a double purpose: ".....(1) to introduce the common desert flowers to newcomers to the Southwest; and (2), to give a little background of information about the plants' interesting habits and how they have been and are used by animals, by the native peoples, and by the settlers." The illustrator shows by line drawings the characteristics of 145 common or spectacular plants of Texas, New Mexico, Arizona, and California, of the total of 184 species differentiated by the author.

HITCHCOCK, A. S. Manual of the grasses of the United States. Second edition, revised by AGNES CHASE. U. S. D. A., Miscellaneous Publication No. 200. 1051 pages, illus. February 1951. $3.00 from Government Printing Office.

LITTLE, ELBERT L., JR. Southwestern trees, a guide to the native species of New Mexico and Arizona. U. S. D. A., Agriculture Handbook No. 9. 109 pages, illus. December 1950. 30¢ from Government Printing Office.
The author follows a brief discussion of the vegetation and the forests of the two states with compact descriptions and drawings of leaves and fruits.

McMINN, HOWARD E. An illustrated manual of California shrubs. 663 pages, illus. University of California Press, Berkeley and Los Angeles, Calif. 1951 (2nd printing). $6.50.
First published in 1939.

POLUNIN, NICHOLAS and others. Botany of the Canadian eastern arctic. Part II, Thallophyta and Bryophyta. National Museum of Canada, Bulletin No. 97 (Biological Series No. 26). 573 pages, illus. 1947. $1.00.
7 specialists contributed the sections dealing with the different main groups. See Wildlife Review No. 35, page 73 for a review of Part I, Pteridophyta and Spermatophyta.

VEGETATION--FLORAS & MANUALS--Continued

RAYMOND, MARCEL. Les Cypéracées de l'Île Anticosti: Carex et Kobresia. Canadian Journal of Research, C 28 (4): 406-444, illus. August 1950.
"Sixty-two species.....of Carex, and one species of Kobresia occur on Anticosti, a 135-mile long island located in the mouth of the St. Lawrence River." There are a few notes on the value of sedges as pasture and their relation to deer grazing. 16 maps show the ranges of 23 species in Quebec.

SCOGGAN, H. J. The flora of Bic and the Gaspe Peninsula, Quebec. National Museum of Canada, Bulletin No. 115. (Biological Series No. 39). 399 pages, illus. 1950. $1.00.
There is a detailed description of the environment; keys to families and species; and a list of plants that gives habitat, local distribution, and general distribution for each species.

STEVENS, ORIN ALVA. Handbook of North Dakota plants. 324 pages, illus. North Dakota Agricultural College, Fargo, N. D. 1950. $4.50.
Keys, brief descriptions, and many drawings make this an independent handbook for the identification of the wild ferns and flowering plants of North Dakota.

VEGETATION--MANAGEMENT

CARTER, VERNON GILL. Man on the landscape; the fundamentals of plant conservation. 129 pages, illus. National Wildlife Federation, Washington, D. C. 1949. $1.50 (copied from The Journal of Wildlife Management for January 1951, page 124).
A review by Roland C. Clement says, in part, "This small book is a timely, and on the whole a successful attempt to redress the distortion of emphasis which has led conservationists to think first of wildlife, then forests, soils, and water, and only recently of vegetation. Mr. Carter believes that vegetation is even more important than botanists themselves have claimed, ..."

VEGETATION--RESEARCH

PELTON, JOHN F. Outline for ecological life history studies in trees, shrubs, and stem succulents. Ecology 32(2): 334-343. April 1951.
This article discusses methods, general references, and representative studies; it provides a detailed outline for studies and a bibliography of more than 150 items.

VEGETATION--FOREST
(See also MAMMALS--FOOD, Pearson)

BUELL, MURRAY F. and CANTLON, JOHN E. A study of two forest stands in Minnesota with an interpretation of the prairie-forest margin. Ecology 32(2): 294-316, illus. April 1951.
Each of the stands is dominated by sugar maple and basswood. The maple-basswood forest has recently invaded the prairie.

VEGETATION--FOREST--Continued

CUNNINGHAM, R. N. and others. Forest resources of the Lake States Region. U. S. D. A., Forest Resource Report No. 1. 57 pages, illus. 1950. 30¢ from Government Printing Office.

The forests of Minnesota, Wisconsin, and Michigan are largely cut-over. They now occupy less than one-half of the total area of the 3 states. Aspen occupies about two-fifths of the commercial forest area, other hardwoods one-third, spruce-fir less than one-fifth, and pine less than one-tenth. Good management would increase the area of all the better types.

DUERR, WILLIAM A. Forest statistics for eastern Tennessee. Southern Forest Experiment Station, Forest Survey Release 66, 25 pages, illus. April 1951.

About half of the acreage of this mountain and Great Valley region is forested; and more than three-fourths of the forest is well stocked. More than one-third of the forest is softwood (pines, hemlock, and cedar). Data are based on the study of aerial photos and the field examination of plots.

GUYTON, T. L.; ANTHONY, ROY D.; and SHERMAN, L. WALTER. A survey of certain tree crops in Pennsylvania. 24 pages, illus. December 1950.

This survey deals with Asiatic chestnuts, English walnut, black walnut, honey locust, flowering crabapples, and other species. The authors recommend the locating, testing, and propagating of the best of thousands of seedlings now growing in Pennsylvania; the establishment of seedling strains; research to insure more regular production of acorns and beechnuts under forest conditions; and the development of controls for diseases and destructive insects.

GYSEL, LESLIE W. Borders and openings of beech-maple woodlands in southern Michigan. Journal of Forestry 49(1): 13-19, illus. January 1951.

An ecological study of 6 different woodlands, in which the structure and composition of the borders and openings were much more varied than in the interior of the woodlands.

LITTLE, S. Observations on the minor vegetation of the pine barren swamps in southern New Jersey. Bulletin of the Torrey Botanical Club 78(2): 153-160. March-April 1951.

"The vegetation was studied by quadrat samples on 16 areas..... These areas included both formerly cultivated sites and sites that had never been cultivated. Both had stands principally of whitecedar, swamp hardwoods, or a mixture of these trees."

VEGETATION--FOREST--Continued

LITTLE, SILAS, JR. Ecology and silviculture of white cedar and associated hardwoods in southern New Jersey. Yale University School of Forestry, Bulletin 56. 103 pages, illus. 1950. $1.50 (copied from Journal of Forestry for June 1951, page 454).

A review by George R. Moorhead commends this bulletin for its breadth and thoroughness.

LOCKE, STANLEY S. Forestry handbook for the Upper Mississippi Region (Fifth Edition). U. S. D. A., Agriculture Handbook No. 13. 101 pages, illus. September 1950. 45¢ from the Government Printing Office.

This handbook was written for soil conservationists, not for foresters, farmers, or the general public. In a section dealing with Protection it discusses damage to young plantations by field mice, pocket gophers, and rabbits; and damage to older trees by deer, beaver, sapsuckers, squirrels, and porcupines.

McCORMACK, J. F. Forest statistics for Florida, 1949. U. S. D. A., Southeastern Forest Experiment Station, Forest Survey Release No. 36. 73 pages, illus. October 1950.

This report summarizes data that have been published in reports on 4 separate Florida regions. Two-thirds of the State is forested, one-sixth is farmland and urban, one-sixth is marsh, grassland and sand land. Pines dominate on more than two-thirds of the commercial forest land; hardwoods occupy one-fourth; cypress, 6%.

OOSTING, H. J. and BILLINGS, W. D. A comparison of virgin spruce-fir forest in the northern and southern Appalachian system. Ecology 32(1): 84-103, illus. January 1951.

The authors compared 9 virgin stands in the Great Smokies with 4 in the White Mountains (New Hampshire).

RETTIE, JAMES C.; DOVERSPIKE, GEORGE E.; and BANKS, WAYNE G. Forest resources of the Monocacy River watershed of Maryland and Pennsylvania. Northeastern Forest Experiment Station, Station Paper No. 40. 29 pages, illus. March 1951.

This watershed comprises 970 square miles, of which a little more than one-fourth is forested. Of the 5 forest types recognized, red and black oak covers 70% of the total forest area, chestnut oak 12%, and white oak 12%.

RETTIE, JAMES C. and WRAY, ROBERT D. Forest statistics for New Hampshire. U. S. D. A., Northeastern Forest Experiment Station, Forest Survey Release No. 9. 56 pages. October 1950.

About five-sixths of New Hampshire is forested. Hardwoods are dominant in nearly three-fifths and white pine in more than one-fifth of the commercial forest area. Other forest type groups are spruce-fir and aspen-paper birch. Data are based on the study of air photos and the field examination of plots.

VEGETATION--FOREST--Continued

ROE, EUGENE I. and STOECKELER, JOSEPH H. Thinning over-dense jack pine seedling stands in the Lake States. Journal of Forestry 48(12): 861-865, illus. December 1950.
Snowshoe hares did some thinning, but not enough.

SANDBERG, LYNN; HORN, ARTHUR G.; and GUILKEY, PAUL C. The forest resource of Cass County. 59 pages, illus. Office of Iron Range Resources and Rehabilitation, 624 State Office Bldg., St. Paul 1, Minn. 1950.
Three-fourths of the county's land area is commercial forest. 13 cover types are recognized. Of these, aspen-birch covers 40% and grass and brush 30% of the area. In most types these are opportunities for improved management. Data are based on the study of aerial photos and the field examination of plots.

STEARNS, FOREST. The composition of the sugar maple-hemlock-yellow birch association in northern Wisconsin. Ecology 32(2): 245-265, illus. April 1951.

TISDALE, E. W. Grazing of forest lands in interior British Columbia. Journal of Forestry 48(12): 856-860, illus. December 1950.
The author describes 3 main forest zones: ponderosa pine, Douglas-fir, and spruce-fir. "These forests are adapted for multiple use, with grazing fitting well into a pattern which includes watershed maintenance, logging, wildlife, and recreation. The future of forest grazing in the region is complicated by fire protection policies since the best ranges are under sub-climax forest stands which owe their presence to fires."

VEGETATION--BRUSHLAND
(See also VEGETATION--GRASSLAND, Beckwith; Humphrey; Talbot)

BEVER, WENDELL. What about South Dakota's sagebrush? South Dakota Conservation Digest 18(1): 12-13, illus. January 1951.
The relation of silver sage and big sage to antelope and sheep.

BOGUSCH, E. R. A bibliography on mesquite. The Texas Journal of Science 2(4): 528-538. December 1950.
More than 100 entries, with a 9-page discussion of the many subjects involved.

BURCHAM, L. T. Suggestions for improving wildlife habitat on brush ranges. 14 pages, illus. State of California, Dept. of Natural Resources, Division of Forestry. February 1949.
The author discusses habitat factors, vegetation cover types, the requirements of different game species, and methods of habitat improvement (providing edge and interspersion and providing water and food).

VEGETATION--GRASSLAND

BECKWITH, STEPHEN L. Ecological succession on abandoned farm lands and its relationship to wildlife management. Journal of Forestry 49(2): 114. February 1951.

This abstract of a University of Michigan Ph.D. thesis (1950) describes a study made in Washtenaw Co., Michigan in the 1940's. It covered the 25-year period following abandonment and emphasized the effects of plant succession on pheasant, cottontail, and other common birds and mammals. Initial stages and the rate of their succession were largely determined by the character of the final crop (whether cultivated crops, small grain, or hay). The early stages of succession were best for pheasants; while all stages during the 25-year period were favorable for cottontails.

HOPKINS, HAROLD H. Ecology of the native vegetation of the loess hills in central Nebraska. Ecological Monographs 21(2): 125-147, illus. April 1951.

The plant communities described are (1) short-grass type, (2) mixed-grass type, (3) mid- and tall-grass type, (4) western wheat grass type, and (5) shrub thickets.

HUMPHREY, R. R. Arizona range resources II. Yavapai County. Arizona Agricultural Experiment Station, Bulletin 229. 55 pages, illus. July 1950.

A map, good photos, and orderly descriptions define Yavapai County's 5 main types of vegetation: grassland, pinyon-juniper, chaparral, desert grassland, and desert shrub. For all but desert shrub, both photos and text rate the types according to whether the range is excellent, good, fair, or poor. Further concrete information concerns environmental factors, indicators of improving range, indicators of range on the downgrade, range management, and the grazing value of some common plants.

PIEMEISEL, ROBERT L. Causes affecting change and rate of change in a vegetation of annuals in Idaho. Ecology 32(1): 53-72, illus. January 1951.

"The communities that compose the greatest part of the vegetation of annuals on lands formerly occupied by sagebrush-grass are three: Russian-thistle, mustards, and downy chess." "Russian-thistle dominates the greatest space the first two years; mustards, the third and fourth, and downy chess from the fifth year on."

TALBOT, M. W. Indicators of southwestern range conditions. U. S. D. A., Farmers' Bulletin No. 1782. 36 pages, illus. Revised December 1947.

VEGETATION--GRASSLAND--Continued

VOIGT, JOHN W. and WEAVER, J. E. Range condition classes of native midwestern pasture: an ecological analysis. Ecological Monographs 21(1): 39-60, illus. January 1951.

The authors classify prairie plants according to whether they decrease under grazing, increase under grazing, or are weedy invaders. They describe (1) the process of degeneration of prairie, (2) the areas studied, (3) their vegetation, (4) methods, (5) range condition classes (excellent, good, fair, poor), (6) basal area, mulch, and bare soil, (7) height of grazing, and (8) unconsumed forage. "As the pastures degenerate, the best forage grasses, the decreasers [big bluestem, little bluestem, etc.], are replaced by the second best ones, the increasers. Finally these give way, mostly to annual grasses and weeds."

VEGETATION--WILDLIFE PLANTS
(See also VEGETATION--FOREST, Guyton & others)

BORELL, A. E. Russian olive as a wildlife food. The Journal of Wildlife Management 15(1): 109-110. January 1951.

Produces a heavy crop of persistent fruit every year in New Mexico, and is much eaten by upland game birds, wild ducks, and songbirds.

BORELL, A. E. Russian-olive--for wildlife and good land use. U. S. D. A., Leaflet No. 292. 8 pages, illus. February 1951. 5¢ from Government Printing Office.

Russian-olive thrives throughout the West and is a favored food of more than 40 kinds of birds and mammals.

ESHBAUGH, FRED P. Trailing raspberry--another of those versatile plants. Soil Conservation 16(12): 269-271, illus. July 1951.

Rubus parvifolius, introduced into United States from Japan in 1929, is growing successfully on a wide variety of soils and sites in the parts of Nebraska and Kansas that have 24 inches or more of precipitation. It produces good fruit, makes a good ground cover, is not greatly damaged by insects and rodents, and provides good nesting and feeding places for birds and small game.

KLIMSTRA, W. D. Some factors affecting the growth and survival of multiflora rose as cover for quail in Davis County, Iowa. The Journal of Wildlife Management 15(2): 158-160. April 1951.

VEGETATION--AQUATIC
(See also INVERTEBRATES (GENERAL), Stephenson)

HITCHCOCK, A. E. and others. Growth and reproduction of water hyacinth and alligator weed and their control by means of 2,4-D. Contributions from Boyce Thompson Institute 16(3): 91-130, illus. July-September 1950.

This report summarizes work begun in Louisiana in 1948 and reported upon previously in Contributions from Boyce Thompson Institute 15: 363-401. 1949. (see Wildlife Review No. 60, page 61.

VEGETATION--AQUATIC--Continued

SINGLETON, J. R. Production and utilization of waterfowl food plants on the East Texas Gulf Coast. The Journal of Wildlife Management 15(1): 46-56, illus. January 1951.

".....yields in the form of seed, stems and leaves, and rootstock were determined for 14 of the better recognized waterfowl food plants ....." Ducks in this region are now eating more rice and less native foods than formerly; goose food habits remain unchanged. Better marsh management is needed to increase the food supply.

SMITH, GILBERT M. The fresh-water algae of the United States. Second edition. 719 pages, illus. McGraw-Hill Book Co., Inc., New York. 1950. $10.00.

This greatly revised and emended edition of a standard manual, first printed in 1933, keys and describes all of the genera and higher groups known in the country, lists all of the species, gives references to all significant publications, and has drawings of more than 500 species.

ZIMMERMAN, P. W. and others. Practical control of water hyacinth with 2,4-D. Agricultural Chemicals 5(2): 45-49, 81-85, illus. February 1950.

LAND & SOILS

KELLOGG, CHARLES E. and NYGARD, IVER J. Exploratory study of the principal soil groups of Alaska. U. S. D. A., Agriculture Monograph No. 7. 138 pages, illus. March 1951. $1.00 from Government Printing Office.

Contains information on the geography of Alaska, soil formation, the great soil groups, forage composition in relation to soils, and the use and potentialities of the soils for agriculture. The great soil groups include tundra, podzol, subarctic brown forest, bog soils, half bog soils, ground-water podzols, mountain tundra and mountain half bog, alpine meadow, alluvial soils, lithosols, and regosols. The account of each of these groups contains descriptions of climate, vegetation, and soil profiles in different areas.

WAGAR, J. V. K. Some major principles in recreation land-use planning. Journal of Forestry 49(6): 431-435. June 1951.

WATER

CARHART, ARTHUR H. Water--or your life. 312 pages. J. B. Lippincott Co., Philadelphia. 1951. $3.50 (copied from Soil Conservation for July 1951, page 287).

A review by Bernhard A. Roth says, in part, that this book ".....is a respectable critique of water conservation programs now existing; it offers standards for measuring others still in the proposal stage; and, with its careful index, it furnishes a ready reference to both ancient and modern history of water conservation in the United States."

WATER--Continued

COOKE, MORRIS L. and others. Ten rivers in America's future; the report of the President's Water Resources Policy Commission. Volume 2. 801 pages, illus. 1950. $6.00 from Government Printing Office, Washington 25, D. C.
Characteristics and problems of, and plans for, the basin of the Columbia, central valley of California, Missouri, Rio Grande, Colorado, Connecticut, Alabama-Coosa, Potomac, Ohio, and Tennessee.

COOKE, MORRIS L. and others. A water policy for the American people; the report of the President's Water Resources Policy Commission, 1950. Volume 1: General report. 445 pages, illus. December 1950. $3.25 from Government Printing Office, Washington 25, D. C.
This report describes national and regional objectives, emphasizing the need for basic information, unity in planning, and watershed management. Among the specific subjects discussed are total water supply, flood control, land reclamation, water for domestic and industrial use, pollution control, navigation, electric power, recreation, fish and wildlife, and conservation education.

FRANK, BERNARD and NETBOY, ANTHONY. Water, land, and people. 331 pages, illus. Alfred A. Knopf, New York. 1950. $4.00 (copied from Journal of Forestry for January 1951, page 50, where the book is reviewed by Howard E. Ball).

IRWIN, W. H. and STEVENSON, JAMES H. Physicochemical nature of clay turbidity with special reference to clarification and productivity of impounded waters. Bulletin of Oklahoma Agricultural and Mechanical College 48(4): 1-54. (Biological Series No. 4). February 1951.
Laboratory and field experiments demonstrated that ".....a quantity of green vegetation equal to three times the weight of suspended clay cleared the waters of impoundments without critically depleting the dissolved oxygen." Mid-summer is the best time for such treatment in Oklahoma. Aquatic plants help to keep water clear.

NEWCOMBE, CURTIS L. Water wealth lost by silt pollution. Soil Conservation 16(12): 272-275, 278, illus. July 1951.
Examples from Chesapeake and San Francisco Bays.

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